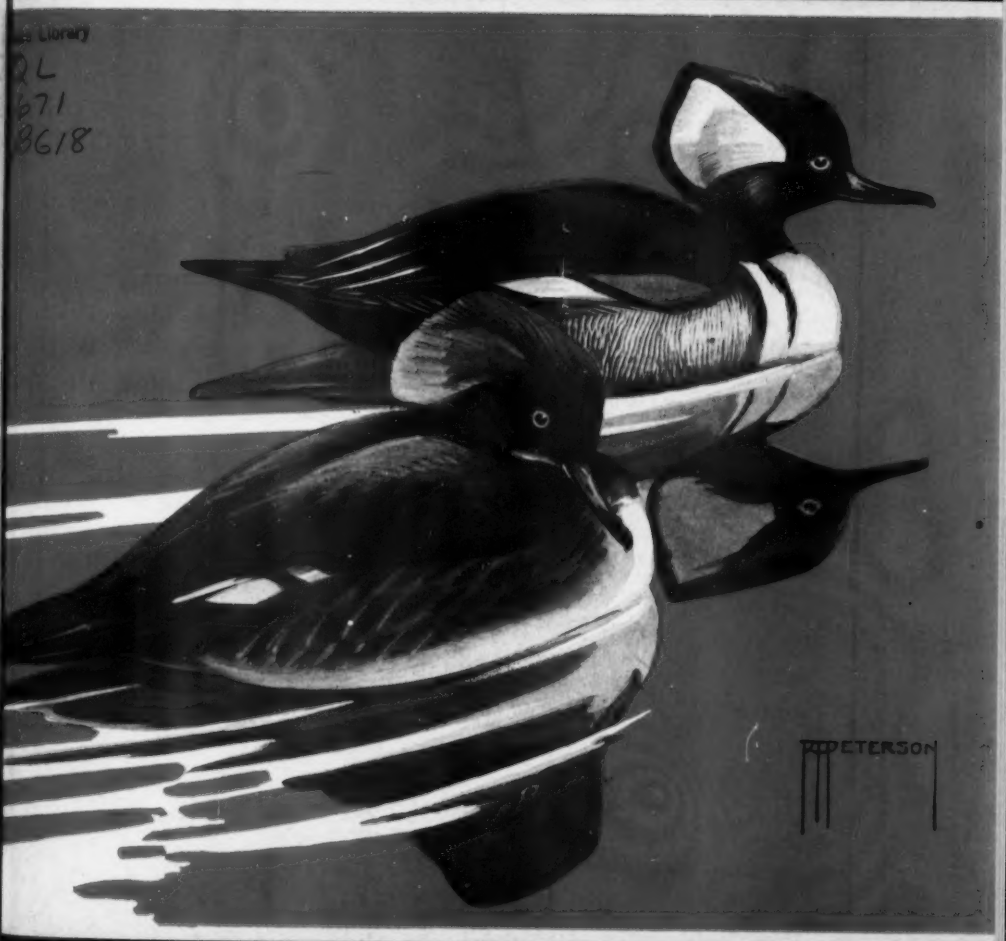
BIRD LORE



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MARCH APRIL, 1937

Published by

THE NATIONAL ASSOCIATION OF AUDUBON SOCIETIES

BIRD-LORE

A BI-MONTHLY MAGAZINE DEVOTED TO THE STUDY AND PROTECTION OF BIRDS AND MAMMALS

Published at Crescent and Mulberry Streets, Harrisburg, Pa., by the National Association of Audubon Societies

Vol. XXXIX MARCH–APRIL, 1937 No. 2

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BIRD-LORE is published bi-monthly by the National Association of Audubon Societies. Subscription price, $1.50 a year in the United States, $1.75 foreign. Single copies 30 cents. Notice of change of address should be received by the 10th of the month prior to issue with which it is to be effective. BIRD-LORE regrets that it cannot continue subscriptions beyond date of expiration. Checks and money orders should be made payable to BIRD-LORE.

Entered as second-class matter, August 6, 1900, at the Post Office at Harrisburg, Pa., under the Act of March 3, 1879.

Editorial and advertising offices, 1775 Broadway, New York, N. Y.

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THE PRESIDENT'S PAGE

THE eradication of poisoning of mammals is one of the most important things to be done now for wild-life preservation, soil conservation, range improvement, and erosion and flood control, with consequent economic benefit to our people.

Is instruction of CCC boys in the distribution of poison to destroy wild animals the kind of character-building that the President of the United States had in mind when he advocated the setting up of the CCC?

Yet, during the three fiscal years, 1934-36, a total of almost twenty million acres was covered with poison by the ECW, namely by CCC boys, for the control of various so-called rodent pests.

Look at the article by our Executive Director on page 107 of this issue of BIRD-LORE, which does not pretend to be in any sense a complete answer to the leaflet recently issued by the U. S. Biological Survey.

Do not waste your letters on the Federal bureaus concerned. I urge you to write to the President of the United States at the White House—and make it strong. I urge you to get after your own senators, congressmen and assemblymen, both Federal and state.

It is high time to stop poisoning of wild animals, and the best place to begin would seem to be with the Federal agencies involved.

Kermit Roosevelt

This home—after the flood—sold for ten dollars

Soil Cons. Serv. Photo

BIRD-LORE

MARCH - APRIL, 1937

We Can Reduce Flood Destruction

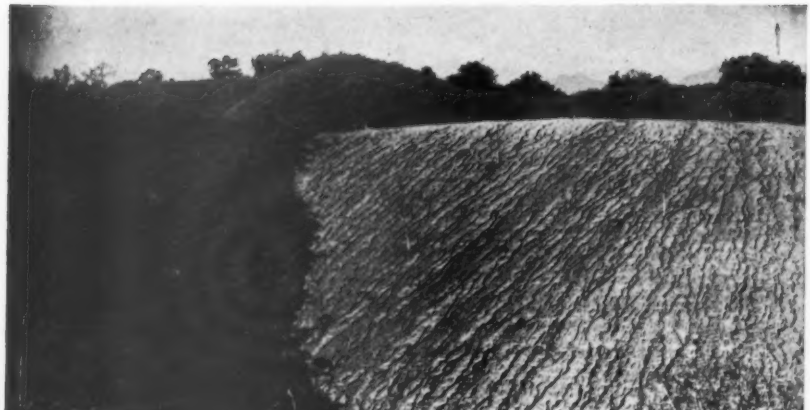
By **Morris L. Cooke**

Former Administrator, Rural Electrification Administration

EACH year's experience indicates more clearly that a flood-control program, to be effective, must be comprehensive. This means that flood control must start where rain strikes the land, and extend over entire drainage basins.

For many years we have sought a solution of the flood problem by the construction of great water-control works in the lower reaches of our rivers. This vast system of levees and other control works has resulted in a material reduction of the flood hazard to the farms, towns, and cities along the main channels. It is not necessary to go back farther than the disastrous flood of January and February for proof of that. But mounting flood crests have forced us to add greater fortifications to these flood defences—higher levees, larger reservoirs, more and stronger dams. Most of this down-stream activity has been directed toward control of concentrated waters after they have reached the major stream channels.

In recent years, floods seem to have increased in both viciousness and frequency. We have started 1937 with the most destructive flood this continent has ever known. As flood waters recede throughout the Ohio Valley, the enormous task of reconstruction is begun, of finding homes for the homeless and of cleaning mud and debris from the streets and buildings. A major disaster like this is a stern reminder of our close relations to water and land, and to climatic conditions. It is also a reminder that our attitudes and policies relating to the use of our lands and waters must be changed if we are to obtain effective control over flood waters and minimize their destructive effects. This means that we must attack the problem at its source by removing the causes of floods rather than by devoting our entire attention to flood areas alone. In other words, works on the main rivers such as levees, floodways and reservoirs must be supplemented by



Soil Cons. Serv. Photo

Water-stripped land supports neither plants nor wild life. A half hour's rain—two inches—carried away nearly 500 tons of top soil per acre from the area on the right. Little or no soil was lost on the planted slope

control of the water in the up-stream areas where it strikes the ground.

The control of little waters in up-stream areas, on farm, wood, and grasslands, is of critical importance to the Nation. When uncontrolled, these waters not only contribute to the destructive effects of floods in down-stream areas but also destroy our lands by washing away the fertile soil upon which is based our existence as a prosperous Nation. Flood loss and soil loss are parts of the same tragic story—the misuse and destruction of our basic natural resources. For more than a century we have been busy stripping off timber from steep hillsides, plowing under and overgrazing natural grasslands, leaving millions of acres with little or no vegetation to hold the soil and retard the flow of water off the land. By our practices, we have encouraged and promoted soil-erosion and the rushing of rain-water to the streams and rivers before receiving any benefit from it. Soil, once removed from the land, cannot be restored, and may become a destructive agent when it reaches the larger rivers by silting up channels and reservoirs, or by being deposited on bottomlands. The extent of soil washed into rivers is indicated by the estimate that almost a third of a billion tons of soil was washed from the land when the Ohio River reached flood stage in January.

Today, three-fourths of our cultivated land is scarred by the ravages of wind or water. In our use of land, little attention has been paid to slope or other natural conditions. Thousands of steep fields have been cultivated up and down the slope, with each furrow serving as a gutter to speed the escape of surface water. Gullies have been allowed to form and grow into new, unwanted tributaries of creeks and streams, carrying soil and water off the land at an alarming rate. These man-made drainageways are not restricted to isolated communities but are found over much of the agricultural land of the country.

The desire to turn every possible acre into cropland has, in many instances, proved to be unprofitable because of the submarginal quality of the land. This has been particularly true of many lowlands, marshes, and swamps which under natural conditions provided temporary storage for considerable excess water. The unwise drainage of many of these areas has resulted in the destruction of much wild life and the elimination of this natural storage capacity.

Partly as a result of the misuse of our basic resources, we are suffering from floods in some sections and dust-storms and drought in others. If these earth diseases are to be mitigated or prevented we must develop comprehensive plans for the conservation and proper utilization of our land and water resources. It is of basic importance to the formulation of such plans that proper recognition be given to the relationships existing between land and water. In the final analysis, flood control is but one aspect of the larger problem of the proper use of these resources and should be considered accordingly.

Comprehensive plans for the conservation of our water resources must necessarily be developed on the basis of entire drainage basins and should include every acre in the watershed if maximum benefits are to be received. Effective flood control, for example, must start at the uppermost crest of the ridge, extend across all the lands in the watershed, encompass the small streams, creeks, ponds and lakes, and extend to the lower reaches of the main rivers. The execution of programs for the proper utilization of land and water in up-stream areas involves a tremendous amount of work and will require the active coöperation and effort of every landowner. In many cases, proper land use may be dependent on the economic status of the land operator. Tenancy, for example, has been primarily responsible for the misuse of many of our agricultural lands.

In order to minimize floods, and at the same time receive the maximum benefits from our water resources, it is essential that we hold as much water as possible on the land where it falls and, by various practices, promote its infiltration to ground-water storage. In many places, surface storage is feasible and may be of value for stock water, irrigation, or wild life. Today it is generally recognized that the ground water is one of our most valuable assets because it supplies much moisture to growing plants, pro-

vides a source of well water for household and irrigation, and helps to maintain springs and stream-flow. In addition, this underground store has other values. If water is impeded from entering this storage, excess run-off from the surface will result, and may do serious damage through washing away the top soil and, at critical times, contribute to flood magnitudes.

Under natural conditions there appear to have been special provisions made to retain water on and in the land in order to utilize it fully and to maintain a balance among soils, vegetative cover, and water. Perhaps one of Nature's most effective devices for promoting the infiltration of water to the underground storage was the establishment of a cover of grass and trees to retard the water and promote its absorption in the ground. Lowlands, depressions, lakes, and ponds also provided storage facilities for water although some of these were of a temporary nature.

To prevent run-off and promote the infiltration of water, many practices have been developed, practices that represent an important part of a program for headwater control. On agricultural lands, many of these practices are simply an adaptation of Nature's methods to the conditions of advanced cultivation. Instead of leaving fields smooth and bare, inviting washing and heavy run-off, they roughen the surface and turn the earth itself into a retardation device. By plowing and cultivating around the hill, on the contour instead of up and down the hill, each furrow, each harrow scratch, becomes in effect a small dam or terrace. Reinforced by grass cover when the land is resting, a great deal of water is kept from running away and enters the ground. Measurements by the Soil Conservation Service on the water losses from average land in the watershed of the Muskingum River, an important tributary of the Ohio, reveal that of all the January (1937) rainfall, 75 per cent was absorbed by the soil under a cover of grass and only 4 per cent was absorbed where corn was raised, the remainder running off directly to the stream. The wide gaps between the effectiveness of areas in holding rainfall does not mean that we must stop cultivating our land, or that we must return all slopes to forest, but it does mean that we must make some compromise with Nature if we are to continue to till the soil and if we are to hope to reduce the height of floods in down-stteam areas.

Other practices of equal importance to contour plowing, which should be a part of a water- and soil-conservation program, include: gully control, terracing, strip cropping, and crop rotation. The introduction of these practices on agricultural lands generally may be considered as a compensation for the destruction of the native vegetation. The experience of the Soil Conservation Service on its demonstration areas indicates that these practices are highly successful in conserving water and preventing run-off and erosion.

Another important aspect of an up-stream engineering program relates to those lands unsuitable for

Every major flood exacts a heavy toll in human distress Soil Cons. Serv. Photo

the production of tilled crops. Thousands of acres of steeply sloping land are now in cultivation that probably should never have been stripped of their grass or forest cover. Where conditions are favorable, it is highly desirable that such areas should be returned to either forests or grass, since this is one of the best means of making such lands effective water-retarding agents. Reforestation of steeper slopes may not only result in a source of income to the landowner, but also may have considerable influence on flood control in certain watersheds.

In addition to the promotion of infiltration to increase underground storage, attention should also be given to surface storage. Water held in farm ponds, marshes, and swamps may be of considerable value to the individual landowner. In many parts of the country there are areas particularly well suited for surface storage, and in a proper land-use program would be so designated. Some surface reservoirs may provide permanent storage while others may hold water temporarily.

All of these practices should be included in a comprehensive program for the conservation of our land and water resources in headwater areas. It should not be inferred, however, that all of the practices are applicable to all sections of the country or to any one farm. The correct practices for each individual case must be determined by a careful survey and study of the soil and other natural conditions. As has been stated previously, the control of resources in up-stream areas should

be considered as part of the larger comprehensive program for the entire drainage basin. This will include in down-stream areas generally the construction of larger reservoirs, retarding basins, channel improvements, dams, floodways, and levees.

Already some remarkable results have been recorded in lessening flood crests by the adoption of conservation practices on headwater areas. For example, during September of 1936, two record rains fell over the general watershed of the Colorado River in Texas. Conservation practices had been widely adopted on 8000 acres of land in the watershed of the Concho River, one of the main tributaries of the Colorado. Although these two record rainfalls sent the Colorado on a wild rampage of destruction, the land along the Concho that had been protected by conservation practices held every drop of water that fell and no soil was lost. The water retained on the land in the Concho watershed was estimated to be enough to reduce the flood crest of the Concho in that part of its basin by one foot. Such evidence as this is not sufficient, however, to predict that similar results would be obtained in all parts of the country.

Mr. H. H. Bennett, Chief of the Soil Conservation Service, states that by the use of erosion-control methods, run-off water from agricultural lands can be reduced 20 to 25 per cent. Much significance is attached to this statement because "this is the margin in most cases between mere high water and destructive floods." In themselves, proper land-use practices will not prevent floods, but they can do much to minimize the destructive effects especially when coördinated with down-stream control works. Some conservation measures are effective in holding soil and water the first year they are applied to the land; others require much longer periods of time to become effective. On land that has been mistreated for more than a century, no controls can be made effective in a short period of time.

The increasing frequency and magnitude of floods, the wasting of fertile lands by erosion, and continuing dust-storms make it imperative that we formulate a comprehensive national program for the conservation of our soil and water resources. It is important that this be done immediately because, as I have said elsewhere, "we have probably less than twenty years in which to build up the technique, to recruit the fighting personnel, and, most difficult of all, to change the attitude of millions of people who hold that ownership of land carries with it the right to mistreat and even to destroy their land, regardless of the effect on the total national state." Unless we begin at once to treat each field and farm that goes to make up a watershed area according to its specific needs and adaptabilities, we must expect an ever-increasing cost in human, erosion, wild-life, and flood losses. The job can no longer be postponed if we are to maintain our existence as a strong and prosperous Nation.

Government Poison for Wild Life

By **John H. Baker**

THE United States Biological Survey recently printed and distributed Wildlife Research and Management Leaflet BS. 54, by Stanley P. Young, Chief, Division of Game Management, under the title 'Rodent Control Aided by Emergency Conservation Work.'

It has long been the contention of the defenders of the U. S. Biological Survey that the poison activities should not be held against it; that this form of wild-life destruction was being prosecuted under a mandate from a lobby-ruled Congress; that the bureau personnel, for the most part, disliked intensely its odious job. It was, then, disturbing, to say the least, to receive the above leaflet, which is manifestly an attempt to justify the poisoning, and which even goes so far as to take credit for it. It is too brash an apology for wholesale poisoning to be permitted to pass unchallenged.

Character-building in the CCC?

"Rodent control is one of the most popular projects with ECW enrollees . . . in handling the crews, the supervisors have imparted knowledge to the boys that will be of permanent benefit to them and to the Nation." How it can be of "permanent benefit to them and to the Nation" is not explained.

"It has been the attempt of the Biological Survey to make the rodent-control project a field laboratory for the education of the enrollees in natural history and wild-life management. . ." What activities, short of instruction in the use of bayonets on fellow men, are better calculated to blunt the sensibilities of the youths of the CCC?

Is that the kind of character-building that the President of the United States had in mind when he advocated the setting up of the CCC?

"During the three fiscal years, 1934-36," says Mr. Young "a total of almost twenty million acres had been covered by ECW for the control of these various rodent pests.

"The ECW program afforded the first opportunity of somewhere near meeting the Federal Government's *obligations* [italics ours] to the citizens of the West in the matter of adequately controlling the rodent pests that breed and range on public lands, and from these strongholds infest and reinfest adjacent private holdings."

Under what "obligation" is the Federal Government to give preferential treatment to a few western citizens at the expense of the Federal taxpayer? Biologists tell us that where rodents on public lands in the West are disproportionately numerous, the condition has been induced by over-grazing by privately owned domestic live-stock that does not pay its own carrying costs.

I am willing to concede that localized control may at some times be necessary on cultivated lands, but here we have generalized control over wide areas. Usually investigation demonstrates that necessity of control in localized areas is a direct result of our past mistakes and land-abuse. It would seem to me to be the Government's "*obligation*" to discover ways and means of escaping from such necessity of control. Let us assume, by way of analogy, that the land is afflicted as is a drug addict. Would any doctor, in attempting to cure such addict, prescribe continued or increased doses of the drug?

Is There Any Justification?

Mr. Young says "the most concrete proof of the necessity of rodent control is found in the amount of money expended by private individuals throughout the West for this purpose."

This strikes me as about the weakest argument in behalf of poisoning that I have yet heard, and suggests that the concrete is elsewhere than in the proof. One might as well say that the substantial contributions of money by individuals to the Republican Party Campaign Fund are "concrete proof" of the need of a Republican administration at this time!

It is evident, from the character of printed articles summarizing the amount of poisoning by employees of the Biological Survey (in which is stressed competition by the poisoners, both individually and as teams) that the emphasis lies today on extending the poisoning as widely as possible, and not on minimizing it.

Biological Survey Not the Only Culpable Federal Agency

About a year ago the Secretary of the Interior approved an ECW poison project in Arizona and New Mexico involving distribution by CCC boys in 22 camps of 430,000 pounds of poisoned oats bait and 21,000 ounces of strychnine alkaloid. At that time the Audubon Association made strong protest to the Secretary and received the following reply, signed by Mr. Harry Y. Slattery, personal assistant to the Secretary: "The Division of Grazing of this Department has inaugurated a broad forage conservation and range development program in the Southwest through the medium of CCC camps. This program involves mainly construction of stock watering-places and other improvement activities. Rodent-control work also is being undertaken, but only on ranges which are heavily infested with herbivorous rodents and where the natural balance of vegetative growth and soil fertility are being disturbed thereby. This work is outlined and supervised by experts and every precaution is taken to prevent injury to other forms of wild life and domestic animals. It is the purpose of this Department, in the administration of public grazing-lands, to promote the best public interests in all natural resources and a proper wild-life program is being given careful and considerate attention."

As a masterpiece of applesauce, the above seems to take the cake!

The Bureau of Indian Affairs, in spite of the understanding attitude of its present chief, seems unable to cast off the shackles which tend to force it to a continuation of poisoning activities on Indian lands.

The Association took up the matter of ECW poisoning with Mr. Robert W. Fechner, Director of the ECW, primarily from the standpoint that instruction of these young men in the distribution of poison is highly undesirable for several reasons. Mr. Fechner passed the buck to the U. S. Forest Service, and in due course forwarded to us the latter's reply, which I quote in part as follows: "In using poison, however, it should be clearly understood that the crews of ten to twelve boys at the camps are under the direct supervision of a competent Biological Survey man. He is in the field with these boys throughout the progress of the work, has full opportunity of explaining to, and does do so, the boys reasons for poisoning work in the first place. In addition to this you, of course, will appreciate the extent to which our educational program has been carried in these camps. We are endeavoring to give the boys the basic principles involved in wild-life management and in this course of instruction, through lectures and pictures, emphasize the protection of wild life and improvement of conditions. Control of predators or the destruction of any species of wild life is illustrated by specific examples and the reasons therefor thoroughly explained. It is felt that under this system the boys will not only have a keener appreciation of the value of wild life, but will also have knowledge of the proper methods to use in the improvement of environment."

This correspondence would seem to furnish an excellent illustration of what used to be, and I guess still is, called 'a run-around.' It brings us right back to the Biological Survey's leaflet and Mr. Young's defense of instruction of youth in the poisoning of wild life as of "permanent benefit to them and to the Nation."

Rodents Essential to Soil Conservation

The Federal Government has in recent years widely advertised, and in this the President himself has taken the lead, the economic urgency of conserving our soils and waters. The rodents have an essential and important rôle to play in such conservation, especially in our western country. Soil erosion cannot, I think, be arrested with thorough success unless due consideration be given to the underlying relationship of the rodents to the soil.

The following quotations, under this subhead, are extracts from articles published from time to time in the *Journal of Mammalogy:*

"Not only does the gopher bring raw soil to the surface to be further weathered, thus releasing the mineral food that the plants require, but it is continually burying vegetation beneath the earth which it throws up at the mouths of its burrows; and furthermore, vegetation is cut into pieces and carried below ground in large quantities by gophers, much of which is not eaten but remains

there, just as does the vegetation which is turned under by the plow, to add to the humus content of the soil. All the excreta of a pocket gopher are deposited underground in special branches of its tunnel system, also at about the same critical depth —six inches. It must be emphasized that it is on *wild* land, land that is untouched by the farmer, that the gophers thus serve in a valuable way as enrichers of the soil . . . An important function, it seems to me, performed by burrowing animals is that of counteracting the packing effect of large mammals on uncultivated grazing lands. The impact of heavy feet on the soil, especially when wet, crowds the particles together and renders the earth less suitable for plant growth. Close tamping tends to exclude the air and hence to suffocate the plant roots, to which oxygen is as essential as it is to animal life. One has to but observe the conditions on mountain meadows outside the limits of national parks to appreciate the point here made. Often where the country has been overstocked with cattle or domestic sheep, the grasslands have become poor—the crop of grass is scrawny—except where gopher workings occur; the sites of these are marked by patches of vivid green. Indeed, on ordinary hill slopes I have repeatedly noted the rejuvenation of the plant cover here and there, traceable directly and obviously to the activity of burrowing rodents."

"It may be said, then, with considerable measure of confidence, that on wild, uncultivated lands, especially those comprised in our watersheds, the rodents are among the necessary factors in the well-being of the ground-cover, whether it be sodded grass, chaparral of one type or another, or true forest more or less approaching its climax development."

Natural Control of Rodents

Again it has been stated: "There is the great importance of the native *carnivorous* mammal population in stabilizing the numbers of rodents—in preventing sporadic overdraft by them upon the plant cover. Biological control, automatically applied, is provided for by the carnivore factor."

The control, by poisoning or otherwise, of so-called predatory animals, mainly mountain lions, bob-cats and coyotes, is another story. Suffice it to say that their wilful destruction, together with that of Hawks and Owls, all primarily because of prejudice and a preferential interest in game species as targets, or in domestic live-stock, has had a large part to play in increase of rodents on which they naturally feed, and in consequent demand for rodent extermination.

What to Do About It

We all know that all of the agencies above mentioned are in many ways carrying on excellent policies with relation to conservation of wild-life resources. In this particular matter, however, they are, in my opinion, on wholly indefensible ground. I do not know of any qualified biologist in this country, other than those employed by poisoning agencies and thereby throt-

tled as regards truthful expression of their views, who is not 100 per cent against the use of poison as a general control medium against mammals on uncultivated lands. I can see no justification, either on economic grounds or as a vehicle for the distribution of relief moneys, for large-scale control operations against mammals on public lands.

The Biological Survey has frequently pleaded that it is better to have the poisoning in its expert control than to have it done by state employees or by individual landowners. While it is quite likely that distribution of poison might be more indiscriminate and less selective in its effect if in the hands of states and individuals, the thing to do is to *stop poisoning*, because it is biologically unsound and therefore economically disastrous. The best place to begin stopping it is with the Federal Government.

Do not waste your letters of protest on the bureaus concerned: address the President of the United States at the White House direct—and make it strong. There are three steps involved now:

1. Stop the use of the CCC boys in distributing poison.

2. Stop poisoning by all Federal bureaus and agencies.

3. Inaugurate research activity to ascertain further facts on which wise conservation policies may be based.

Get after your own senators, congressmen and assemblymen, both Federal and state. The eradication of poisoning of mammals is one of the most important things to be done now for wild-life preservation, soil conservation, range improvement, and erosion and flood control, with consequent economic benefit to our people.

Progress Report on Ivory-billed Woodpecker Study

Dr. A. A. Allen, Professor of Ornithology at Cornell University, reports he has received a number of letters from Mr. James Tanner, indicating that he is making progress in initiating his study of the Ivory-billed Woodpecker that he is carrying on under an Audubon Research Fellowship. He is familiarizing himself with the habitats in which the birds formerly occurred, and securing all available information from local people on the history of the birds and the probability of their current existence. When general data of this sort have been secured, one of his first studies will be an ecological investigation of a timber tract where they formerly were found, and of a virgin wilderness tract where they still occur, in an effort to learn the exact relationship of timber to the continuance of the birds. Further progress will be reported in BIRD-LORE.

The Male Flicker's Part in Incubation

By **Alexander F. Skutch**

RECENTLY I watched two nests of the Northern Flicker. Both were high up in dead trees, so far decayed that they seemed unsafe to climb, and I did not attempt to learn the number of eggs nor how many days were required to hatch them. What I wanted particularly to determine was the part taken by each sex in the incubation of the eggs, and whether the male or the female kept them warm during the night. At both nests it was the regular duty of the male to sit on the eggs during the hours of darkness.

The female occupied the nest during the late afternoon, and her mate came to relieve her as night approached. In clear weather, the males of both pairs delayed their arrival until a little after seven o'clock in the evening, when the last nearly horizontal rays of the setting sun filtered between the trunks of the flat woodland where the nests were located. The latest time of the arrival of the male which I recorded was 7.23. One evening I found one of the males looking out from his high doorway as early as 6.40, but he took three brief recesses, during which he called much, before he finally settled down in the nest for the night at 7.13. On a dark and rainy afternoon the male came to replace his partner at 6.22.

During the early morning hours, when their feathered neighbors, less burdened with domestic cares, sang their cheerful morning songs and hurried about for their breakfasts, the male Flickers continued to sit quietly in their holes and warm their eggs, without breaking their fast. As the sun rose higher and the day became warmer, they climbed up to look out of their doorways with increasing frequency. At one of the nests, before which I began to watch at daybreak, the female did not appear to take her turn on the eggs until 8.35, four and a half hours after the Robins had announced the return of day with their dawn chorus. During all this time, the male Flicker stuck patiently to his task of keeping the eggs warm, with only a single brief recess of two minutes' duration. At the second nest, at least on the morning of my watch, the female was even less considerate of her mate. As the hours dragged by and still she failed to appear, the bird in the nest became increasingly impatient of the long delay. First he climbed out and clung to the trunk beside the entrance, where he carefully preened himself, spreading his wings and revealing the beautiful yellow shafts of the feathers as he carefully put them in order. His toilet complete, he crawled back into the hole, but as the day wore on the preenings became increasingly frequent. Time and again he leaned out of the

Young Flickers — *Photo by Allan D. Cruickshank*

entrance for a look around, and at a few minutes past 8 o'clock he called to his mate for the first time that morning. But she did not respond to his ringing *wic wic wic wic*. So, soon after this he left the nest and flew to a neighboring tree, to which he clung while he called *fee-ah fee-ah*, then came promptly back to his eggs. As he became hungrier and hungrier, he called more and more for his undutiful partner, and left the nest for brief periods. But he never remained away more than ten minutes at a stretch, and at half past nine, when I decided to delay my own breakfast no longer, he still faithfully warmed the eggs and awaited his laggard mate. I had begun to fear that some calamity had befallen her during the night, and the poor male might wait all day in vain for her return; but my fears proved to be ungrounded, for that afternoon I found the female in the nest.

I thought it would be interesting to see how long each member of a

pair of Flickers occupied the nest during a twenty-four-hour period. Beginning my vigil at 1.30 in the afternoon, I watched before the nest until dark, then returned at the break of the following day and continued the watch until 1.30 P.M. The record which I made may prove of interest.

MAY 23:

1.30 P.M. I begin the watch, the female in the nest.
1.56. The male replaced the female, and remained, with a single recess from 3.36 to 3.40, until at
3.57. The female returned. Toward the end of her turn on the eggs she became impatient and took recesses from 6.09 to 6.14, 6.34 to 6.37 and 6.43 to 6.49.
7.03. The male replaced the female and remained for the night.

MAY 24:

4.15 A.M. I resumed the watch. After it became lighter the male looked out of the hole. From 8.10 to 8.12 he took a recess. Otherwise he sat until at
8.35. The female replaced him on the nest. She took a recess from 10.27 until 10.30.
10.47. The male returned and relieved his mate. During this period he was very impatient and took recesses from 11.40 to 11.44, 11.58 to 12.02, 12.13 to 12.23, 12.45 to 12.52. At 1.06 he went off again, and the nest was still unattended at 1.30, when I ended my watch.

During the entire period of twenty-four hours the male incubated for a total of 17 hours and 21 minutes, the female 5 hours and 27 minutes. The eggs remained unattended for 1 hour and 12 minutes. Even if we do not include in the reckoning the hours of darkness or very dim light, but consider only the period during which diurnal birds were active, roughly from 4.30 A.M. to 7.30 P.M., the male still occupied the nest the greater part of the time, 501 minutes against the 327 of his mate. After the eggs hatched, the male continued to brood the young Flickers during the night.

The male Flicker is not alone among Woodpeckers in taking charge of the nest during the night. I found, last spring, a nest of the Red-bellied Woodpecker, too far from my residence for frequent observations, into which the male retired in the late evening to brood the young nestlings for the night. In Central America, where I first discovered that male Woodpeckers make such excellent husbands and fathers, I have satisfied myself that the males of at least four species are responsible for keeping the eggs or the nestlings warm during the hours of darkness. These are the White-billed Pileated Woodpecker (*Ceophlœus lineatus similis*), the Truxillo Woodpecker (*Centurus santacruzi pauper*), the Guatemalan Flicker (*Colaptes mexicanoides mexicanoides*) and the Guatemalan Hairy Woodpecker (*Dryobates villosus sanctorum*). All female Woodpeckers are not so inconsiderate of their mates as were the Flickers that I watched. The female Pileated Woodpeckers, which I studied in the lowlands of Guatemala, came to relieve their mates from half an hour to an hour after daybreak, instead of keeping them waiting for their breakfast four or five hours, as the Flickers did. It is stated that the female Black Woodpecker of Europe incubates during the night, a situation very different from that which seems to prevail among the American representatives of the family.

John Burroughs and Conservation

By G. Clyde Fisher

"Loved the wood-rose, and left it on its stalk."—EMERSON

THE great conservationists of wild life in this and other countries have been naturalists, those who have really been interested in the wildflowers and the trees, the birds and other animals. And this was to be expected. How could it be otherwise? Nevertheless, one may well inquire, "What did Burroughs do for conservation?" Perhaps not much directly, for he was no preacher and no propagandist. But still he did much in an indirect way.

In a recent letter, Frank Chapman made the following statement: "John Burroughs, as a widely read literary naturalist, did more to arouse an interest in nature than any other writer of his generation. Much of his work was based on original observation; his standards were high and were never sacrificed to popular demands, and he was among the first to condemn wanton inaccuracy in others."

It was as a literary naturalist that Burroughs made his contribution. In his essays, such as 'The Bluebird,' 'Tragedies of the Nests,' and 'Bird Courtship,' he had a way of passing on his own enthusiasm in a natural way. And his enthusiasm was genuine, as was everything about Burroughs. It will be remembered that he said it was the finding of the great Audubon books in the library of the U. S. Military Academy at West Point that made him a naturalist. "It was like bringing powder and fire together," he declared.

There is no doubt that Burroughs has succeeded in putting himself into his books as few men of letters have done. That he must have felt the truth of this statement himself, is indicated by his reply to a friend who urged him to write the story of his life: "My books are my autobiography."

In one of these books, the Sage of Slabsides has made the following significant observation, "Man can have but one interest in nature, namely, to see himself reflected or interpreted there, and we quickly neglect both poet and philosopher who fail to satisfy, in some measure, this feeling." The appreciation of this fundamental truth explains why Burroughs was an interpretative naturalist. Evidently he was convinced that information was not the most important thing, although he felt, and felt strongly, that straight seeing and honest reporting were of vital importance. With this foundation, the play of his poetic nature brought forth the essays that

John Burroughs—Born April 3, 1837

Photo by G. Clyde Fisher

Photo by G. Clyde Fisher

John Burroughs—Born April 3, 1837

we like to read and read again. As one of his fisherman-naturalist friends has said, "Burroughs' essays will stand the supreme test of being read outdoors."

John Burroughs' simple, unobtrusive style has led one of his critics to say, "His manner of writing is so unaffected that we feel we could write in such a manner ourselves. Only we cannot." Although his essays read so easily, much hard work, much revision, as this writer knows, was necessary to make this possible. However, our literary naturalist always protested against his books being called 'The Works of John Burroughs,' since, as he said, so much play had gone into the making of them. Here we note the joy he had in his writing.

When asked by one who has never read any of Burroughs' books, which one he should read first, I usually recommend his first outdoor book, 'Wake-robin.' In this little volume is Burroughs' description of the song of the Hermit Thrush, in itself a classic. To him this song was "the finest sound in nature." In 'Wake-robin' is also the first description of the flight-song of the Oven-bird. As the suggestive title of this book, chiefly about birds, he chose the name of a wildflower that blooms in the woods when the birds are returning in the spring. His study of the birds and the flowers always went hand in hand, and we find them in close proximity on his page, as they are in nature. Burroughs once told the writer how Emerson had congratulated him upon his first outdoor book, closing with the words, "Capital title! Capital title!"

In 'Wake-robin,' Burroughs says, "Take the first step in ornithology . . . and you are ticketed for the whole voyage." I like to paraphrase this as follows: "Take the first step in John Burroughs' books, and you are ticketed for the whole shelf-ful."

We do not wantonly destroy that in which we are deeply interested. Thornton Burgess realized an important bit of child psychology when he remarked, "Boys can trap muskrats, but they cannot trap Jerry Muskrat," and his contribution toward conservation has been in the same indirect ways as that of Burroughs. While it has been generally recognized that Burroughs has done much to open the eyes of his readers to the beauty of nature, especially of nature near at hand, it has probably not been realized how much this aroused interest in wild life has meant to its conservation.

On April 3, 1937, will occur the centennial of the birth of our poet-naturalist, a date that will be fittingly celebrated in many places throughout the land.

Highway Planting for Bird Attraction

By J. Horace McFarland

Chairman Roadside Development Committee, American Civic Association

SINCE 1920, the American Civic Association has paid particular attention to that form of highway planting which would best promote a restoration to the natural beauty of America. In October of that year, a memorable meeting on Country Planning occurred at Amherst, Mass., when the whole relation of the countryside to the general welfare was intimately discussed. It was then realized that when the movement for better roads began, the ordinary ideal of the engineer, which paid no attention to attractiveness other than that of a smooth highway over which to travel, must be extended or improved. Much attention has been given by many states to the planting along the highways, not only because such planting, properly managed, provided much less expensive maintenance conditions, but because it was reluctantly found necessary to consider the actual value of beauty.

Curiously enough, as America emerged into the ability to travel widely over this continent, our motoring citizens came to appreciate highway beauty particularly, without any suspicion that it might be effectively promoted at home. Now, however, the situation is changed. States that are doing highway planting, for bank protection and the like, are also doing it because it stimulates profitable tourist travel.

At the Amherst meeting stress was laid on the desirability of having these highways reflect the natural flora of the states they traversed. Thus a trip across Pennsylvania or New York or Connecticut or Massachusetts, if this ideal prevailed, could easily show a reflection, however faint, of the natural flora, immensely rich, highly varied, and extremely beautiful. Somewhat ruefully it is admitted that this ideal has been but slowly accepted, not infrequently because the nurserymen, to whom reference would have to be made for the material needed, knew entirely too little about native plants and entirely too much about easily grown exotics.

Now it seems exceedingly well worth while further to extend this movement and to see to it that the planting along the highways will be of the shrubs and trees that provide not only shelter but food for our feathered friends. The thought needs only to be introduced to be endorsed wherever it has been mentioned, and this presentation in BIRD-LORE, which has from its inception steadily stood for the bird in nature, free, unrestrained and happy, will, it is hoped, bring about a larger use of the material in highway planting

Photo by J. Horace McFarland Co.

"Cornus florida . . . would be an item of major importance"

which would add bird-beauty to plant-beauty.

Just what to plant to bring about this better condition is a matter for local determination. Obviously, in those states in which our superb dogwood, *Cornus florida*, is native, that would be an item of major importance. In other locations the tree or shrub known to be attractive to birds would be substituted or added, and in every case this highway planting for bird attraction could be an enlargement of the thought above presented—that of carrying the natural beauties of the land along its highways.

It is one of my sorrowful remembrances to think of a major concrete highway running through Pennsylvania, certain slopes along which have been liberally planted with the Japanese barberry. This excellent exotic is easy to grow and easy to maintain, and its foliage and red berries are alike attractive. Yet they look dreadfully artificial, because they do not belong. In fact, the birds themselves condemn this excellent barberry for this purpose, because it is almost at the point of starvation that any bird will use these berries for food. There are the native huckleberries, several members of the elder, or sambucus, family, and a score or more of other attractive and easily grown shrubs that do belong, which might have been substituted in the "Keystone" State.

In thus setting forth the idea there is obviously no thought of a de-

veloped plan suited to the highways of the United States by name of shrub and source of plants. Readers of BIRD-LORE are quite familiar with the berry-bearing items convenient to their homes and native to their states. The planting plan, therefore, would be the recommendation to highway authorities that these are the items that can desirably decorate the roadside planting as it proceeds.

It is not at all unlikely that the nurserymen in the various states will come to present suitable material for the consideration either of the authorities or of those private individuals who can sometimes best supplement the authorities. I remember, for example, that along one section of the Lincoln Highway in a certain state the good women of one city undertook to see that forty miles of the right-of-way of that highway were planted with the suitable and beautiful American elm. I think of another location in Florida where on a main highway a superb planting of the brilliant poinsettia took one section, and the no less brilliant bignonia, there called 'Flame Flower,' another section. In neither of these cases had there been thought of the birds, but there easily can be, and any decorative plantings already instituted can to advantage be improved by the bird-plantings thus proposed.

It is desirable in considering this subject broadly to suggest that there must be some careful thought of adaptability. The old idea of the American highway, unfortunately once 33 feet wide in certain eastern states, and then "liberally doubled" in width, has now been expanded, and we have actually become decimal in our consideration, so that highways are often 100 feet wide or 200 feet wide. A vastly better plan is that which the skilled landscape architect would generally propose, which would be that the right-of-way be wide enough to include such natural features, either of slope or trees or elevations of any sort, as would really integrate the highway. One very able engineer of my acquaintance, who, alas, has now passed on, went with me one day to the legal authorities of our state to discover the possibility of such a survey as would protect the tens and hundreds of millions of dollars invested in our highways by controlling the land along their borders so that no harm could be done esthetically or practically to these same highways.

Thus in considering any highway planting to be proposed, the material in mind would need to be high or low, spreading or compact, in the direction of returning the landscape as closely as possible to its natural features.

This last thought follows a memory of a very notable highway passing through a section that, naturally, had great hemlocks and superb rhododendrons, together with a score of other shrubs which belonged in the same general range. I photographed a section of that highway, and then on one occasion showed it to that eminent landscape prophet, Frederick Law Olmsted, who said that it would be fortunate if any landscape architect could bring about so beautiful a planting in a

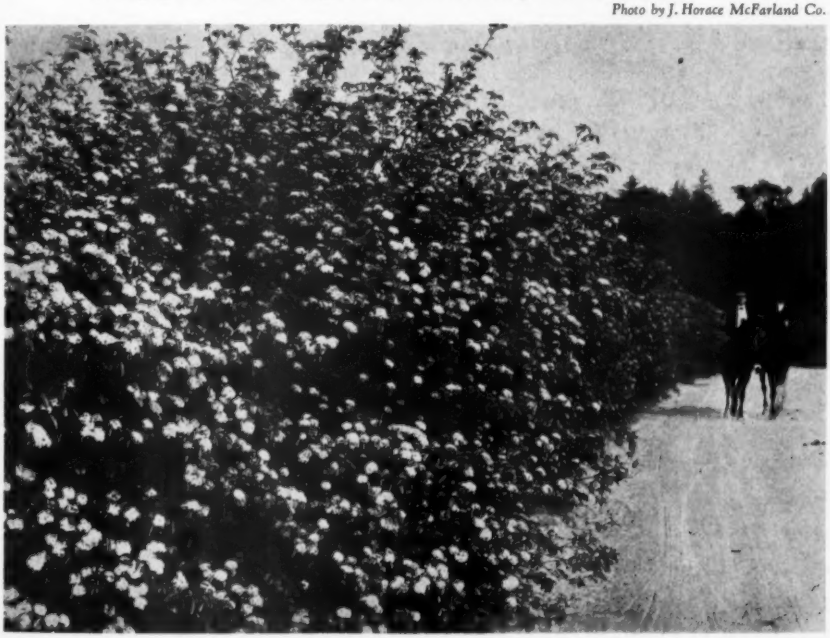
lifetime. (Yet, alas, the beauty of that highway was destroyed in one season because it was deemed necessary to run a telephone line perfectly straight between two points!)

I think I have said enough to suggest that the bird-lover, who can easily be the lover of beautiful highways, needs to combine knowledge of the birds of his vicinity with the bird-food and beauty-developing plants of his neighborhood so that suggestions can be made to those in authority that have point and value. He may well confer with the nurserymen for further suggestions, because sometimes a desirable exotic can be introduced which may well fit in the beauty of the highway.

Of course, all of this does not seem to allow much room for billboards. Those of us who prefer to see nature without the aid of this particular form of so-called 'commercial art' are fervently hoping the time is not far distant when every state in America will have made it impossible, by direct action or restrictive taxation, to use the expensively acquired roadsides, the property of all, for the benefit of the few who assault their beauty and increase the hazards of the road through glaring and ugly commercial announcements.

Beauty of the roadside may be combined with usefulness to the birds

Photo by J. Horace McFarland Co.



Fish Protection and the Industrial Use of Waters*

By **William L. Finley, Sc. D.**
Author, Lecturer and Field Naturalist of the American Nature Association, Washington, D. C.

WE ALL know what the land-promoters did in the West to rob our country. They boosted the schemes to dry up swamps, drain ponds and lakes on the pretense that the American people would prosper by having more land for more crops and more food for the public. We all know the results, how we had less fish, less fur-bearing animals, and less water-fowl. How recreational areas were destroyed, and, worst of all, how the water-table of many states was lowered, turning the farmlands into dust-storms and deserts. These land-promoters may have prospered, but the public suffered a tremendous loss. The people are now paying the bills for restoring areas that were drained.

We now have exactly the same schemes under way where promoters are reaching into the pockets of the United States Treasury by way of congressional action to exploit our rivers so they may make quick money and turn the public account into the red.

A river that rises in the mountains and flows down across the valley to the sea has many public values, which may be misused or destroyed by selfishness and carelessness that is almost criminal. You all know well the loss from poisoning rivers by pollution. Its water may be needed for domestic purposes. The fall of the current is a source of power and may generate electricity for private or public consumption. Its flow may be diverted into ditches to irrigate fields and orchards for the production of larger crops. Each river is a natural habitat of various species of fish valuable as a food-supply. Waterways have great value from a recreational standpoint, and all of these public uses should be recognized.

The salmon resources of the Pacific Coast are one of the most important industries of the West, and one of our greatest recreational attractions. The records show that these runs of Pacific salmon have been rapidly playing out. In many places this important food-fish is on its last fins.

Of all the rivers in the world, the Columbia is the greatest salmon stream. It has produced, and still produces, more and better salmon than any other stream. In February or early March, the great spring Chinook, sometimes weighing eighty pounds, leaves the ocean and starts its dramatic run. Slowly it fights its way up the river a thousand miles or more to the spawning-beds at the headwaters. There, in September, the eggs are laid, and from these headwaters the fingerlings must make their way back to the sea. Nature has endowed this fish with its migratory urge. The salmon has

*Presented before the North American Wildlife Conference, St. Louis, March, 1937.

found the Columbia River to be a stream where conditions are favorable for it to answer the call. If these conditions are destroyed, the salmon run is destroyed. No power of man or nature can restore it.

Hatcheries of Dubious Value

Some people believe that our migratory runs of Pacific salmon can be saved by the establishment of hatcheries. The records do not show this to be a fact. On the tributaries of the Sacramento River in California, at Baker Lake in Washington, and on the tributaries of the Upper Columbia River, the Bureau of Fisheries in past years had hatcheries where large numbers of salmon eggs were taken. The salmon-runs in these and other regions have disappeared because of power and irrigation dams. In the case of the Pacific salmon, certain facts must be kept in mind. It is in the ocean that the fish stores up the fatty tissue in its body to carry it to the spawning-beds. No food is taken after entering the fresh water; the stomach shrivels up. The flesh slowly turns from bright pink to a whitish color as the eggs develop in size and reach a ripe condition. The Pacific salmon spawns but once and dies. The female has but one egg-sac. Any blockades in the river, or delays in the long trip, affect the life of the salmon.

What about the fingerlings returning from headwaters to the ocean? They seek the shallower waters and many are led out into unscreened irrigation ditches, to die in the fields. When a rapidly moving river is turned into a series of lakes, both the temperature of the water and the natural food conditions are changed. No estimate has been made of young salmon drawn into the turbines of the power plants. Nor can anyone estimate the schools of fingerlings that will be destroyed by bass that will thrive in these lakes through which the young salmon have to pass.

The Federal Government is now building two high-power dams across the Columbia River, one at Bonneville, about 140 miles from the mouth, and another at Grand Coulee about 350 miles above Bonneville. And promoters are pushing plans to build more dams on the Columbia River and to turn this picturesque stream into a series of lakes to develop inland waterway transportation. This will change the whole biological character of the river and put an end to the valuable salmon-runs which are the basis of an industry supporting thousands of families. This is a harvest of the waters worth $10,000,000 a year—which is 5 per cent on a $200,000,000 investment—a gift of Nature not burdened with debt.

Nor can anyone stop the economic development of our country. The Pacific Coast is still rich in natural resources, and its people are eager for a larger population and more industries. On the other hand, rapid exploitation of these resources, although producing quick private profits, has encouraged waste and resulted in great public loss. A most difficult problem is to prevent one use of a resource from destroying its other values. Therefore, before our public waters are exploited it is com-

mon sense to make detailed and careful studies and find out which is the most important service of a river.

Salmon Ignored

When the Federal funds were allotted for Bonneville and Grand Coulee Dams, according to engineering plans, the Columbia River had but one all-important value, and that was the development of power. No thought had been given to the effect of these barriers on the salmon.

Today there is an active promotion campaign in Oregon, Washington, and Idaho to build another series of dams on the upper Columbia and Snake Rivers for the purpose of deepening these water-courses for inland waterway transportation. Since this proposed plan threatens the complete destruction of the salmon-runs, it is only fair to measure the uses of the Columbia for barges or salmon and decide which has the greater public value.

What is the status of inland waterway transportation? In earlier days our rivers were important for commerce. Water-routes were competitors of steam-lines and kept the freight-rates down. What is the situation today? The whole country is a network of steel rails and every populated district is lined with modern highways where trucks and automobiles supply numerous traffic demands. There is no chance for a monopoly. The lower stretches of the rivers where the water is deep will always be available for seagoing vessels. The use of the upper stretches for inland waterway transportation is fifty years out of date.

The old saying, "Transportation by water is cheaper than by land," is also fifty years behind the times when it refers to inland waterways. Cheaper for whom? Not for the public, because they pay for the subsidies to help barge-owners and shippers. The entire expense and upkeep of inland water-routes are taken from the pockets of the taxpayers.

The State of New York spent $346,000,000 in building their state barge canal to foster inland waterway transportation. The canal construction cost was $370,000 per mile, while the building of railroads in that territory ran to only $188,000 per mile. In 1925 the taxpayers of New York expended $4.51 per ton for all freight floated on the canal.

The Public Pays—

Regarding the inland waterway transportation on the New York system of canals, Frederick Greene, State Superintendent of Public Works, made a complete report to Governor Smith in 1925. Among other things he said:

"The greater part of the tonnage was bulk freight—grain, sulphur, salt, etc.—which is carried at low rates *both* by water and rail; a *fair advantage rate* on the commodities carried by canal from Buffalo to New York, the longest haul, is $3.70 a ton. In 1925, it cost the State $4.51 per ton for all freight loaded on the canal, regardless of the length of the haul. From these figures it is evident that it would have been cheaper for the State if all the freight carried on the canal had been put in railroad

cars and the State had paid the freight bill."

There are numerous examples of pork-barrel legislation where large appropriations are forced through Congress by local influence for private gain. George Creel has pointed out that the intracoastal waterway along the Atlantic contemplates a sheltered pathway for yachts and barges to move from Massachusetts to Texas; $40,000,000 was spent to start the project. With railroads on one side and coastwise ships on the other, there was not a ghost of a chance for any commercial traffic.

About twenty-five years ago, promoters figured that $3,500,000 would make the Missouri River navigable between St. Louis and Kansas City. But any river keeps changing and a stream-bed is like a railroad-bed that needs continual repair. Twenty years later the Government had spent $58,000,000. In 1932 over $2,000,000 was spent on maintenance costs. Counting the total amount spent and 4 per cent as a fair interest on the investment, every ton of freight moved on the river cost the taxpayers over $5000. The next step was for the Government to provide a 6-foot channel in the Missouri River between Kansas City and Sioux City, a distance of 417 miles. About $30,000,000 was spent and $50,000,000 more will be needed. In 1929, 489 tons of freight were moved along this inland waterway. The taxpayers paid the freight bill at $2900 per ton.

People are led to believe that rivers and canals furnish cheaper transportation than steam-lines. In places water-rates are 20 per cent lower than those of the railroads. Why not? The Ohio River transportation system gets a free gift of $11,000,000 a year, the upper Mississippi $5,000,000, the lower Mississippi $12,710,000. The railroads rightly claim if they were given the same subsidies and the same privileges they could cut rates 40 per cent which would be twice as low as the boat-rates, and still make money.

Many people know little of the *hidden costs* in waterway transportation. Very large amounts of money are spent to maintain river channels.

In comparing water-rates with rail-rates, another point is generally overlooked, and that is that waterway routes are so much longer than rail-routes. Chicago to New Orleans is 921 miles by rail, 1534 by water. St. Louis to Kansas City, rail 278 miles, water distance 398 miles. Pittsburgh to Cairo, rail 684 miles, 981 by water.

The Taxpayer Again!

Water-routes are often frozen up four to five months of the year. Changing seasons and the hazards of weather often suspend waterway transportation.

George Creel says: "If the national waterway policy was put on a business instead of a political basis, the Government would save at least $100,000,000 a year, and this would in no way impair our transportation efficiency."

In the face of these examples, army engineers are now spending hundreds of thousands of dollars in deepening the channel of the upper Columbia River. The proposed cost

of erecting new dams on the Columbia to subsidize boat and barge travel will take $375,000,000 from a nation that is already groaning under a heavy load of taxes. If barges can move freely up the Columbia and Snake Rivers to Idaho, the promoters claim a large amount of freight will be handled and the people will get the benefit of a cheaper rate. If we take the top figure furnished by these promoters and grant this tonnage might be moved on barges, the actual cost to the taxpayers would be an average of $50 per ton.

This is a drive of the boat and barge interests to get public funds, taxpayers' money, for private benefit. It is supported by local real-estate promoters for the purpose of profiting on any increase of land values where docks or trade centers may be located. These people have no difficulty in getting local chambers of commerce and others to back and advertise this scheme. This logically brings political pressure on our congressmen to appropriate public money—and where does the taxpayer come out?

Why should the Government furnish public funds to promote schemes that wreck our salmon-runs? When a river has various public values why should we not prevent one use of public waters from destroying its other values? Before our important rivers are exploited, is it not common sense to make detailed and careful studies and find out which is the most important service of a river?

I want to make an appeal to the General Wildlife Federation, to every man and woman present, to write to your Congressmen or Senators. If you have $375,000,000 to waste on this promotion scheme, throw it in some polluted waterway of the East. Please don't use it to destroy the salmon-runs of the Columbia River which are worth $200,000,000 to our people, a gift of Nature not encumbered with debt!

Support the Lonergan Bills!

The anti-pollution bills that failed of consideration at the last session of Congress have been reintroduced, in virtually the same form, as S. 13 and S. 15, by the original sponsor, Senator Lonergan, of Connecticut. No one who read the paper on pollution, by Mr. Kenneth A. Reid, in the November–December BIRD-LORE, needs to be told again of the enormous importance of these measures. They have the support of all important conservation organizations—who have found unsatisfactory an alternative bill, which is sponsored by the U. S. Public Health Service *and industrialists who are polluting our rivers*—and **every reader of this magazine is asked to write his or her Senators and Representatives, urging that the Lonergan bills, important to human and wild life alike, be passed at this session of Congress.**

An Audubon Camper Reminisces

By **Frances L. Peloubet**

RAISING my head quietly from my cot I was able to look out of a window and see the slowly rising sun, lighting with beauty the island-studded bay. Color photography, with all its perfection in detail, is at best a poor substitute, for though it fixes pictures of exquisite beauty, no sensation of thrill exists comparable to that one feels while watching the rapid metamorphosis of a gray world turn into a glory of light and color.

Possibly I had not been as quiet as I had thought, or perhaps the light had awakened my roommate, but hardly had we become visible to each other through sleepy eyes, than we were both startled into a very conscious state, and one of incredulity. A loudly cawing American Crow in the form of Allan Cruickshank, exhibiting a great talent, was making a noisy flight beneath our windows. The dormitory, to a man, "put their feet on the ground." Hot breakfast and hearty appetites met in the dining-room in a very short time.

It was hard to believe that this roomful of gay, companionable people had known one another but twenty-four hours, yet just one day before we had come together for our first meal. Fifty-some men and women from various walks of life and from many states had arrived at Newcastle station early in the morning, either on sleepers or from Damariscotta where they had stayed over night. A proverbial Maine fog greeted us at the station, but our spirits were not allowed to be dampened, for our Director was there with greetings, and provision had been made for baggage and for our trip in a bus. And with no delay we were off to the wharf at Medomak where boats met us—boats we were to become very fond of during the next two weeks. Still enveloped in fog, but by now a friendly group, for a nine-mile ride on country roads in a well-filled bus lends to quick acquaintance, we left the mainland and set out on beautiful Muscongus Bay for our new home—Hog Island.

To many in the boats this was a first introduction to the eastern coast and salt water. And I believe to many like myself, though a great many summers have been spent at the shore, salt air always has a bouquet, like that of a fine wine.

The colorless bay, but for shades of gray, was dotted here and there with islands densely covered with tall, straight spruce etched against the sky. A calmness and beauty prevailed, punctuated by the *akak kakak* of the Herring Gulls. To the grays of the foggy bay were added the gray and white of these Herring Gulls circling about or resting on the water. Our Director called attention to our 'first bird,' two jet-black Cormorants resting on a buoy. As our boat approached they flew, first at a down angle, then up—their characteristic 'take-off.'

At the dock on Hog Island we were told to go directly to breakfast, and in the dining-room we were seated at small tables, each table being taken care of this first day by a staff member who helped us most graciously. Sheets of printed instructions were given us, which we followed throughout the morning. Congenial roommates made life delightful for our two-weeks' stay.

Dinner was to be at 1 o'clock, and we were to change to camp clothes. Slacks, new stiff overalls, sweaters, jackets, shorts—in fact, fifty people turned out in fifty different ideas of 'what the well-dressed camper should wear,' and laden with full equipment, books, pencils, notebooks, cameras, and binoculars. Serious recruits—camp-life had begun.

Sunshine had displaced the fog of early morning, and groups of nine or so started out with members of the staff to become acquainted with the peninsula of our island home. Climax conditions exist, no lumbering of the spruce on the 300-acre island having been done, only an occasional tree having been taken by a native fisherman from the shore, and no fire for over a hundred years. Old man's beard (*Usnea*) grows abundantly on the lower limbs of the closely growing spruce where sunlight is shut out, and reindeer moss is thick on the ground.

Several salt-water moon snail shells were picked up, and Mr. Peterson told us of their having been brought up onto the island by Gulls which fed on them. Bunch-berry grew along the path, and the *see-see-see* of the Golden-crowned Kinglet attracted our attention, as also a Junco and a Downy up in the spruce. A large Osprey's nest was over our heads, and we spoke of its mating for life and usually having three young. A Great Blue Heron flew silently across the water, out by the shore.

Coming down to the shore, we looked at the red color at the margin of the water in the tide-pools, stained from iron and vegetable matter, and found those funny little 'springtails' on the surface of the water—tiny specks of insects. 'Purple shells,' paradoxically all white here, all orange in other places; limpets or 'Chinamen's hats'; and barnacles, odd fellows who stand on their heads, lie on their sides, and put their feet in their mouths to feed; rock snails; starfish, some with yellow and some colorless madrepores; and all of these denizens alive! It was difficult for some of us Easterners to realize what extreme pleasure those from inland states were having. Histology, physiology, morphology, fled in place of fun watching an overturned starfish right itself, a barnacle feed, or a rock crab make for cover. Completing our circle of this thumb-like projection of the island, we returned for supper and a get-together in the evening in the spacious recreation room.

Though we were to be working in groups on Birds, Methods, Plants, Insects, and Marine Life during our stay, this coming together for instructive lectures and recreation was a fine way to end each day, for though subjects of individual preference were studied more intensively through the day, knowledge

Photo by R. T. Peterson

"Boats we were to become very fond of"

of broader biological facts and problems embodying these subjects gave us a basis for better understanding. Day by day we were to learn that encyclopedic knowledge of Nature, however profound, is at best but bulk and meaningless if we are not aware of the fact that Nature is not a 'curiosity shop, but a cosmos'—an orderly and harmonious system. Conservation is but the conscious recognition of the harmonious whole.

That first evening Mr. Baker told us of many problems in need of serious consideration; aimless circles within state conservation departments, such as their artificial propagation and distribution of game merely so there will be something for hunters to shoot; indiscriminate use of poisons for 'pest' control; misappropriation of money for mosquito control, and many more, mostly problems due to the ever-destructive stupidity of man.

Regular work started the next morning. We were to realize very soon the wealth of material in overwhelming amounts that was all about us. One of the first lessons was on nests, with suggestions for new methods of collecting and exhibiting. When a food-supply is found adequate, nests are built, and new nests built for second broods, only Crows, some Hawks and Eagles using old nests. Knowing where to look for nests means being able to find them and helps to identify them.

In a small area where spruce were gone, a stand of birches grew, and Redstarts were there. They do not build in spruce. Parula Warblers

follow the range of the Usnea, using it for their hanging nest—the only Warbler building a hanging nest. A Junco's nest built on the ground was found to be lined with deer's hair. And this led to the ever-interesting discussion of food-chains. Ravens had undoubtedly fed on the dead deer, remains of which were not far off, carrion beetles, too, and, in time, enriched soil, more moss, and another deer, perhaps, would feed on it.

Flickers' nests lined with chips, and Chipping Sparrows' nests had been found on the Island. A pair of Oven-birds had built their covered nest on the ground, too, and lined it with sticks. Finding nests on the ground brought up the subject of predation. Mr. Peterson told us that the old 'sweetness and light' idea of conservation never accomplished much, and eliminating the predator helped not at all, but right environment, he felt, was the way to increase numbers of birds. It was a delight to see one nest, that of the Bay-breasted Warbler, built of spruce twigs and lined with the slender little stalks torn off the fruiting bodies of the Polytrichum moss.

Rest periods followed dinners, and I find I am constantly remembering meal-times at camp. Those meals were a never-ending source of wonder to me. A housewife knows how often meals can be unavoidably late, potatoes burned, bread forgotten, and this on the mainland with convenient telephones and markets. But for such delicious, punctual meals to be served to so many by an island dietitian was nothing short of miraculous.

Down along the rocky shore for our afternoon class we learned of zones along the shore and how different the life is in each zone, due to varying amounts of water. The upper Rocky Zone seemed fairly bare, but the Tidal Zone full of life. Most all the shells we picked up had holes bored through them and we knew rock snails had been feeding here. Mr. Pomerat showed us how the rasping tongues of the snails had cut these neat, round holes. We counted the points on the edge of the shells of crabs, five on the green crab, nine on the rock crab.

The regenerative ability of starfish is surprising and also their feeding habits—attaching themselves with their many sucker-like feet to both sides of a bivalve and holding fast until the adductor muscle of the poor clam becomes fatigued and opens, and the mollusk becomes a starfish dinner. Three beautiful corallines and a small worm—spirorbis—were living together on the large seaweed lamanaria, an example of symbiosis, a condition we found so often in this zone that it is eloquent testimony of the intensity of the struggle for existence here.

Later on we saw typical plants and animals of fresh-water ponds and streams, of sandy shores, mud-flats, and wharf-piles; beautifully colored anemones on the lobster cars at a lobster pound. Perhaps, if you are sentimental about lobsters, it would be wise to 'elect' another class that day, for not only are live lobsters shipped from this pound, but cooked lobster meat. How tempting it was! A few days later we had a real lobster feast down on our own rocks.

But not only are the waters around the island teeming with life, but the island itself is a botanist's paradise for lichens, mosses, ferns, shrubs, and flowering plants all grow so abundantly we were living in a botanic garden.

One day as we were finishing breakfast an air of excitement seemed to prevail, and for a good reason, which we soon found out. A and B Groups were given instructions to be ready in a half hour for our greatly anticipated trip—twenty-five miles out to sea to Little Green Island, in the *Puffin* and *Osprey*. It had rained during the night, and great gray clouds hung low against the horizon. As we passed Muscongus Island it stood out darkly. A gray island now, instead of one sunny and green as it had been one day the week before when the whole camp had moved there for the day, classes, meals, and all, even a swim in the sparkling water. It is believed that the Indian Chief Samoset is buried there on that island—an island that until recently considered itself independent of the State of Maine.

Our boats passed Hump Ledge Rock, a bare crag but for a bit of green ragweed here and there. We had called on its colony of Cormorants the week before. Now they stood, adults and young, in huddled groups, some with half-spread wings, queer reptilian-looking birds which do not seem to be of our modern world. A few Black-backed Gulls stood over on the rocks of another island, and one Common Tern posed on the top of a buoy.

Landing from the Cape Cod dory onto the rocky beach of Little Green

A Baby Leach's Petrel

was not difficult, but a bit slippery going on the wet rocks, particularly as one wished to look at the screaming Terns sailing overhead. On the island, Savannah Sparrows were all about us in the grasses. It is the northernmost breeding-ground of Laughing Gulls, and the few we had seen at camp among the big flocks of Herring Gulls had undoubtedly come from this Island. The nesting season was over, and we walked around in the dried grass. Here and there asters were in bloom, and thick, low-growing seaside goldenrod, and a beautiful little mertensia, seaside bluebell, grew on the edge of the pebbly shore.

Four Knots, a Ruddy Turnstone,

"We had called on its colony"

Semipalmated, Spotted, and Least Sandpipers ran along the water's edge ahead of us as we started to walk around the island, and later we saw Dowitchers. A ledge of rocks ran along the flattened top of the island, and down beside some boulders went Roger Peterson, and with his sleeve rolled up he fished down into a burrow half the length of his arm and pulled out the softest little handful of gray fluff I'd ever seen—a three- or four-weeks-old baby Leach's Petrel, with its funny little black tube-nose. Five weeks to hatch this one baby, down in a burrow made by its parents, and there it would stay until winter set in, being fed by its parents when they returned from feeding grounds some 50 to 100 miles out to sea.

Along the other high side of the island, great jagged rocks of basalt, striped with quartz, made a fitting situation for a Raven's nest, lined with pieces of burlap and hemp and bits of wool. And in another burrow down under a giant granite boulder was another fluffy baby, this time an eleven-weeks-old Guillemot with orange mouth and black feet.

Could it be possible our two weeks were gone and it was time to pack and go home? If we could have but one more trip to the lake or another up the Waldoboro River where we had found migration definitely started! We saw 41 species that August morning! Our bags were no fuller, but we had a broader vision, and a deep feeling of indebtedness to Mrs. Millicent Todd Bingham, who had made this Island a sanctuary, and to the Association that had allowed us to use it.

BIRD-STUDY FOR SCHOOLS

PART V

BIRD DAY

By **Roger T. Peterson**

ARBOR DAY is recognized in nearly all of the forty-eight states; Bird Day, though not observed as widely, is celebrated by the schools of at least thirty states. It is fitting that with the advent of spring, and the return of the songsters to the dooryard, such a day be set aside.

There is no standard, set date for the observance of Bird Day. In most states it falls in April; in some, in March; in others, in May. From year to year, the date varies, and is, as a rule, designated by proclamation of the governor. Write to your state superintendent of schools for the date, and inquire whether a state Bird Day bulletin or publication is available.

Now that the country is awakening to the destruction caused by floods, drought, and erosion (formerly spoken of as acts of God, but now believed to be, in large measure, the result of acts of man), conservation is being taught in the schools of many states. *Conservation Week* is being instituted. In this week, Bird Day and Arbor Day find their proper place.

Bird Day has been celebrated in Wisconsin for forty years, and in Alabama for thirty years. Although it has spread to a majority of the other states, it is far from being as well organized in the United States as in some of the European countries. In Hungary, Bird and Tree Day ("Tag der Vogel und Baum") has been observed since 1906. In accordance with an edict issued by Apponyi in that year, Hungarian schools observe this occasion some time in May or June of each year. According to an

official announcement, 4767 reports by 7523 Hungarian schools, dealing with an observance of this day, were received in the school year 1933–34. The most significant facts were the following: 700,000 pupils and 100,000 parents participated. In 2350 schools, 240,000 pupils adopted the pledge of the National Association for the Protection of Animals ("Landes-Tierschutzvereins"); 270,000 pupils of 3400 schools set out 444,000 young trees; birds were fed during the winter by 3500 schools.

Interest in birds is spreading like wildfire. In the eastern states, Massachusetts has always led the rest. Bird-study became a respectable hobby there long before it did elsewhere; it became part of a recognized education. In other states it did not fare so well; for a long time bird-study labored under a stigma of over-sentimentality. There was too much of an aura of 'sweetness and light' around it to suit a great many people. The fault was not in the hobby but in the approach. In the schoolroom, bad bird poetry and weak plays were resorted to; curiosity about bird-life was lost sight of. Looking back a few years at the manuals and bulletins intended as guides for a suggested Bird Day program, we find the exercises opening with a song or two, a recitation of treacly verse, another recitation, a playlet wherein the birds are given human attributes, and finally, another song concludes the session. Little wonder the average healthy youngster's interest in bird-life never reached fever-heat! The whole thing became recitation and dramatics rather than a bird program, and mawkish recitation and dramatics at that!

The value of poetry and playlets cannot be entirely overlooked, but considerable care should be used. Much good bird verse may be found in 'A Bird-lovers Anthology,' published by Houghton Mifflin Co., Boston, Mass.

If you wish to present a play, avoid making personalities out of birds, giving them human attributes, etc. Birds have a psychology of their own and are not small insect-eating human beings with feathers. Instead, act out incidents in the life of John James Audubon or some other well-known ornithologist, take a chapter from Donald Culross Peattie's 'Singing in the Wilderness' and dramatize it.

Bird Day might be observed unpretentiously in the classroom or prepared for, weeks in advance, by the Bird Club and a program presented to the entire school at an assembly in the auditorium. Hold an exhibit in some classroom in conjunction with the program. Invite the parents. The following suggestions for the program and exhibit can be altered or adapted as the teacher sees fit.

Program Suggestions

I. Reading of Proclamation of the Governor.

II. **Papers.** (Essays or Composition on one or several of these titles can be read by students.)

a. Life of John James Audubon.

Sources: 'Singing in the Wilderness' by Donald Culross Peattie.
'Audubon' by Constance O'Rourke.
'Audubon the Naturalist' by Francis H. Herrick.

b. Conservation.

Sources: BIRD-LORE.
Nature Magazine.

c. Future of National Conservation.

Sources: BIRD-LORE.
Nature Magazine.
'Rich Land Poor Land' by Stuart Chase.
'Deserts on the March' by Paul B. Sears.

d. The Game Hog.

e. Value of Birds to Man.

Sources: 'Birds of Massachusetts' by E. H. Forbush.
'The Practical Value of Birds' by Junius Henderson.

f. Should We Protect Hawks?

Sources: 'The Hawk Book' by Dr. John B. May
'What about Hawks?' by National Association of Audubon Societies.
'Enter Hawk—Exit Mouse' by National Association of Audubon Societies.

g. Bird Migration.

Sources: 'Migration of North American Birds' by Dr. F. C. Lincoln, U. S. Dept. of Agriculture. 10 cents.
'Bird Migration' by A. Landsborough Thomson.

h. How to Go A-birding.

Sources: 'The Art of Bird Watching' by E. M. Nicholson.

i. Putting up Bird-Boxes.

Sources: 'Bird-Study for Schools,' Part IV, 'Bird-Houses,' by National Association of Audubon Societies. 5 cents.

j. The Bald Eagle, the Barn Owl, the Baltimore Oriole, or the Life History of any other Species.

Sources: Junior Audubon Leaflets.
Any State Bird Book.

k. Our State Bird.

Sources: A list of state birds can be found in the World Almanac, or an illustrated booklet on the 'Birds of the States' can be obtained from the American Nature Association, Washington, D. C. 50 cents. For further reference, use the Audubon leaflets or any State Bird Book.

l. How Birds Live.

Sources: 'Wild Birds at Home' by Francis H. Herrick.
'How Birds Live' by E. M. Nicholson.

III. **Reading.** The best compositions recording the personal bird observations of the writer.

IV. **Discussions** in answer to questions such as these:
a. What birds get their food from the air?
b. How did birds greatly assist Columbus, etc.?

V. **Formation of Junior Audubon Clubs in the School.** Explanation by teacher.

VI. **Playlets.** Incidents from the life of John James Audubon based on chapters from the book 'Singing in the Wilderness' by Donald Culross Peattie.

VII. **Award of Prizes for Bird-House Contest.** See 'Bird-Study for Schools,' Part IV, 'Bird-Houses,' by National Association of Audubon Societies, for an outline of procedure.

VIII. **Illustrated Lecture** by teacher, or some local bird student of prominence. Slides and films can be rented from the National Association of Audubon Societies or secured from the School Service Departments of the larger museums. The guest lecturer might also award the Bird-House prizes.

IX. **Adjourn to a Suitable Place** and plant trees or shrubs that will be dedicated to the birds.

Exhibit Suggestions

I. **Bird-Houses.** By all means equip yourself with the proper data on the construction of bird-houses as outlined in 'Bird-Study for Schools,' Part IV.

II. **Bird Calendar.** See 'Bird-Study for Schools,' Part I.

III. **Bird Clock.** See 'Bird-Study for Schools,' Part I.

IV. **Owl Pellet Display.** See 'Bird-Study for Schools,' Part I.

V. **Scrapbook or Notebook Display.**

VI. **Exhibit of Colored Outline Drawings** (from Junior Leaflets).

VII. **Posters.** Conservation Posters, Bird-Day Posters, etc.

VIII. **Photographic Exhibit** showing bird-life.

IX. **Display of Bird Books** (on table in classroom or library).

X. **Display of Water Colors or Cut-outs.** Copies might be made of the plates in 'Birds of New York,' 'Birds of Massachusetts,' or the Audubon leaflets, in crayon or water color, the best of these to be cut out and mounted on a large sheet of matte board. The name of each bird and the pupil can be indicated.

XI. **Display of Bird-Nests.** See 'Bird-Study for Schools,' Part I. Dress this display up by mounting pictures of the different species along with the nests. Preferably use the Audubon Bird Cards because of their handy size.

XII. **Habitat Groups** (modeled of clay, twigs, pebbles, etc.)

Suggested groups: A model bird sanctuary.
Marsh scene.
Abandoned farm.

Photo by S. A. Grimes

Florida Barn Owl

Who's Who in Owldom — *Some of our least familiar birds, as caught by some of our most famous photographers*

Alarm! {Left.} A Screech Owl in Saskatchewan

Photo copyright by H. A. Pittman

A Barn Owl in the Bronx. {Below.} Note the nest of cast pellets

Photo by Allan D. Cruickshank

Photo by Allan D. Cruickshank

The Long-eared Owl {above} is one of the most gregarious members of its family

Photo by Hugo H. Schroder

The Florida Burrowing Owl {right} is one of the species under special protection of the Audubon Association's Kissimmee warden

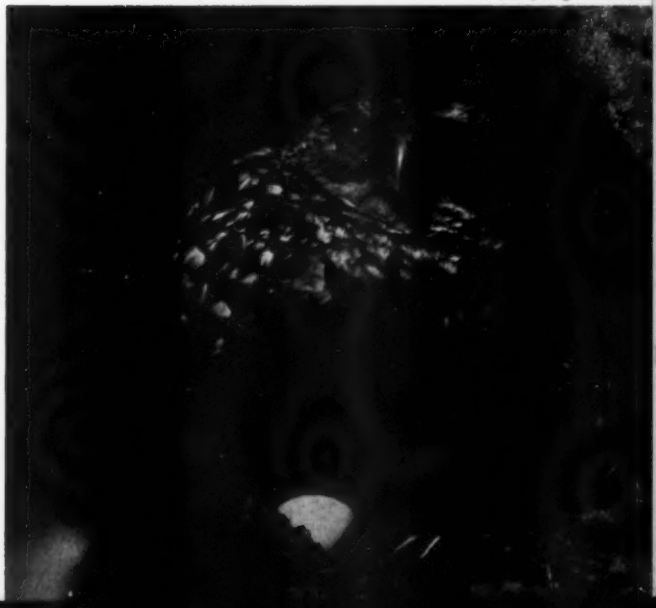


Photo copyright by Wright M. Pierce

The Spotted Owl of the West {left} has rarely been photographed. A full second exposure was necessary in the dark canyon where this bird was pictured

Young Barred Owls {below}

Photo by Roger T. Peterson

Photo copyright by H. H. Pittman

The Saw-whet. {It is believed that the "Kirtland" plumage, above, has never before been shown in a photograph}

Photo by J. M. Johnson

Bird-Lore

A Bi-Monthly Magazine devoted to the Study and Protection of Birds and Mammals

Edited by WILLIAM VOGT
Contributing Editor, FRANK M. CHAPMAN

Published by the
National Association of Audubon Societies

Vol. XXXIX Published April 1, 1937 No. 2

BIRD-LORE'S MOTTO:
A Bird in the Bush Is Worth Two in the Hand

THE identity of wild-life interests with those of man has rarely been more clearly emphasized than in the articles by Dr. Finley, and Messrs. Cooke and Baker, in this issue of BIRD-LORE. It is especially fitting that these papers should be published hard on the heels of the St. Louis meeting of the General Wild-life Federation, where Secretary Wallace set the keynote: "Every form of life has value and interest," he said; "even the most insignificant creatures may be found to exercise the most profound influence upon mankind. . . . As I see it, the problem of wild-life restoration is fundamentally one of land utilization, a matter to which we have just begun to give effective consideration in the past ten years."

In this concept there is, we believe, more hope for the wild-life conservationist than has ever before been visible over a horizon clouded with confused ideas of conservation by means of incubators, game-farms, predator 'control,' and restrictive legalism. The broader realization of man's needs, and wild-life's needs, has literally come down to earth; but instead of the shock being the disillusion we associate with such an experience, the shock has been that of clear vision thrust suddenly upon us—much as certain blind men see again when their equilibrium has been terrifyingly disturbed.

One may carry the metaphor further, and recognize that the new realization is not entirely comfortable. We can see—but years of wandering at a loss in the wilderness are behind us. Whether we have come down to earth in time remains to be seen.

Flood-control—a matter for engineers and sociologists, but without the advice and services of the biologist, the work and wisdom of these men is as nothing. Reservoirs may be built, and 'submarginal' farmers moved from exhausted land (some of which was 'born tired'), but unless there is control of waters where they fall, and in their course to the sea, experts in human and mechanical manipulation can merely postpone the evil day. Proper management of the land, the *sine qua non* of flood-control, means resting earth to provide wild-life crops, cover for birds, increased oxygen supplies for fishes and other forms of aquatic life.

The western plains—a great source of food for Americans of the present day, and many tomorrows, yet unless we revise our attitude toward it, this, one of the nation's greatest resources, will continue on the "easy Avernian descent." When such a basic resource goes, the 'American way' of the historians cannot linger far behind. Here are found the 'hereditary ranges' of some of our most striking wild life, and in the move to bring back the shallow seas of grass, we find an augur that should hearten every conservationist.

Wasted rivers—in many instances these have not been exploited and turned over to the greedy few as extensively as have the soil, the grasslands, the forests. Those who —legally or otherwise—would pirate our running waters will not find an apathetic, uninformed public, willing to turn its pockets inside out for the benefit of the few. Such organizations as the Audubon Association can make their will felt. If we did not appreciate the necessities that Dr. Finley has set before us, the fiasco of the New York State Barge Canal might be repeated indefinitely. With rivers preserved, wild life—the vast complex associated with rivers—will be conserved. A conservationist who was twenty-five years behind the times might think this was a queer way to go about saving salmon and Kingfishers. We, happily, know better.

We know better—we who have watched the evolution of this new concept of land utilization. But do the tailor on the East Side, the Maine lobsterman, the Minnesota farmer know better? Herein lies, in our opinion, the gravest challenge yet to be met by conservationists. And herein, since these are the voters who control this nation, may lie one of the most serious challenges facing democracy today. The necessity for conservation education can scarcely be exaggerated.

THE SANCTUARY SCENE

Illegal Highway Shooting; Wild-life Boom on the Kissimmee, and Other News

Apparently there is a subspecific variety of *Homo sapiens* who thinks anything outside his own back yard is on the frontier, and conceives of this 'frontier' as a wild and woolly place where there are no laws and he can do as he pleases.

The spectacular wild life of Florida suffers in consequence. Ever since the Tamiami Trail was constructed it has been a hunting-ground for amateur Daniel Boones from the North, in spite of state laws that specifically prohibit the use of firearms within a half mile of this highway.

Birds along the Overseas Highway to Key West also suffer and, to a certain extent, so do birds that have the temerity to use their ancestral feeding-grounds close to other improved highways!

Some time ago the Association placed large warning signs along the Tamiami Trail, and more recently at two points on the Overseas Highway. Whenever possible, our warden force, with occasional assistance from state wardens, patrols highways where indiscriminate shooting occurs. Regardless of these precautions there is a noticeable increase in violations of this sort in Florida. Special instructions were issued to certain of our wardens, and a few weeks ago Warden James Durden reported to us as follows:

Picked up a Mr. P—— from out of the State, doing some shooting at Whale Harbor. He was shooting at a Cormorant, but his shots were not effective. I took him in and turned him over to Judge Lowe in Tavernier. A charge of shooting illegally from the highway was made and the defendant put up bond. Subsequently a conviction was secured and a fine paid. Our Supervisor of Southern Sanctuaries advised us that this gun-toting tourist was "pretty well wrought up over it and seemed sore . . . .but this is exactly the sort of thing that must be done." We hope he was "wrought up" to such a degree that he will think twice before using a live bird for a target again.

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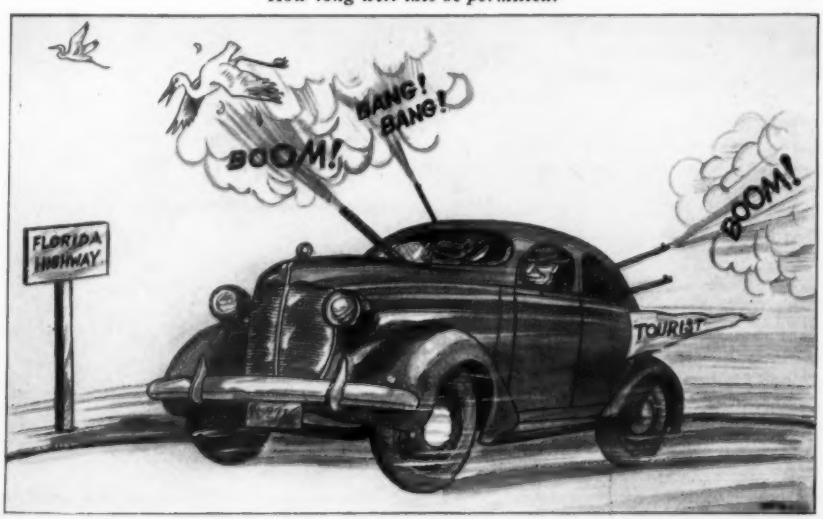
On the Credit Side

Wherever an Audubon warden is stationed, birds—especially threatened species of birds—are saved from destruction and permitted

How long will this be permitted?



to bring their young safely to maturity. Among others, the warden in Florida Bay and the upper keys is doing just such a job this winter. The last reports from him list twenty-six keys in his territory where birds are nesting—most of them Great White Herons.

In BIRD-LORE for November-December, 1935, Alexander Sprunt, Jr., wrote of the alarming condition of the Great White. On his survey of October, 1935, following the regular slaughter of these birds over many years and the added destruction wrought by the Labor Day hurricane, it was found that *only 20 Great Whites remained in Florida Bay and the upper keys!!* That was fifteen months ago. Throughout this time our wardens have been on the job in this area. The latest report shows Great Whites nesting at fourteen locations—a total of 102 nesting birds.

Increase of the species in other parts of the range is proportionate, so this does not represent a redistribution, but a *comeback* that is convincing evidence of the fact that protection from unlawful destruction pays dividends. Audubon members and friends who have contributed to the Sanctuary Fund may be justly gratified at news of these encouraging results.

Other species protected by this same warden include 1124 Wood Ibises, 150 Brown Pelicans, 50 Florida Cormorants, 20 Ward's Herons, and 4 pairs of Bald Eagles. Collectors managed to rob one of the Eagle nests, but all others nested without disturbance. It will be recalled that the last issue of BIRD-LORE (pp. 26–27) told of the Spoonbills raising their young successfully in this same region. These young Spoonbills are now on the wing—colorful additions to the *credit* side of the ledger.

Wild-life Boom on the Kissimmee

The success of the early nesting season on the Kissimmee Prairie has attracted many visitors, including Mr. and Mrs. Allan D. Cruickshank, Dr. Clement B. P. Cobb, of New York; Richard Kuerzi, of Connecticut; and S. Morris Pell, of the Pleasant Valley Bird Sanctuary, Lenox, Mass. Warden Marvin Chandler has taken these visitors on his routine patrols and given them a first-hand picture of the work that we are doing in that part of Florida.

Mr. Kuerzi writes us of finding one location where he and Chandler were greeted with a chorus of many Limpkins. They also saw as many as 60 Glossy Ibises in a single flock. With the recent trend toward behavior studies in mind, Kuerzi states that this particular marsh "would make many of the 'life-history boys' throw away their stuffy notes and once more honestly enjoy the real sport of birding in the Charlie Urner tradition."

Caracaras were numerous, according to Mr. Kuerzi, and 30 of this species were observed over a few miles of prairie. Alexander Sprunt, Jr., spent several days on the Kissimmee recently and has sent us this interesting account of one of the Florida Crane roosts guarded by Warden Chandler:

We arrived at the roost about 5.30 P.M. It was a clear afternoon with a brilliant sunset. The Cranes roost in the grass and water surrounding it. They started coming in about 5.40 P.M. in singles, twos, and small bunches. Chandler was afraid that the recent rains would have some effect on keeping the Cranes off, and making them seek other grounds, and for a while it looked as though this would happen. However, about 6 P.M. they began to come in better. Arriving against the brilliant golden sky, calling loudly, and appearing blackly gigantic against the background, they dropped into the marsh all about us. Some distance off was a large oak hammock into which American Egrets, Ward's, Louisiana, and Snowy Herons were dropping to the extent of several hundred. We counted Cranes until 6.20 P.M. when it became too dark for further accurate work. The birds were counted by the one-two-three method, this being possible as they arrived in small flocks, and were easy to count as individuals. No estimate was indulged in; the figures are accurate. There were some Cranes in the marsh when we arrived, as was easily evident by their calls, but it was impossible to say how many. We tried to flush them by walking out to the deeper water and shouting and clapping hands, but they would not stir. Then, too, Cranes kept coming in after it was too dark to count, so that the real total cannot be given. However, in the period from 5.40 to 6.20 P.M. I counted 171 birds! It is perfectly safe to say that, with those already on the ground, and those which came in after dark, there were more than 200 there.

Aside from the Glossies, our warden

efforts on the Kissimmee are being directed at protection of the Florida Burrowing Owl, which has suffered severely from sundry causes, including persecution by the State Highway Department. Every nest located is placarded with an Audubon sign. This demonstration of interest is heeded by many people and gets results.

South Florida Speeds Up!

A big season is the prospect for southwest Florida, where heavy concentrations are gathering at the heads of the rivers. The 'barometer' of favorable nesting conditions in tropical Florida is the White Ibis, and present signs indicate that this species is going to nest in great numbers this year.

The mobility and, thereby, the effectiveness of warden patrols in the Ten Thousand Islands region has been increased by the purchase of a speedier engine for the patrol-boat. There was a time, not many years ago, when some of our wardens could get along with sailboats—and did! But this is no longer possible. Law-breakers nowadays are prepared to escape from the scene of the crime, or from enforcement officers, in the fastest of automobiles or the speediest of boats. If we continue to improve our equipment, our wardens can compete successfully.

Activities in the seasonal sanctuaries—where wardens are on duty only during spring and summer when the birds are nesting—got off to a good start last month. One of the first jobs in this connection was to arrange for the construction of large warning signs for the Three Islands in lower Laguna Madre, Texas. This was necessary because of the new navigation channel dug directly through our leased area by the Arroyo-Colorado Navigation District. Our case against the District is due to be considered quite soon by the Court of Civil Appeals.—R. P. A.

SANCTUARY FUND LAGS BEHIND NEEDS

Status of Birds Improves

Although the first appeal for funds permitting an extension and maintenance of sanctuary activities on the part of the National Association of Audubon Societies evoked a generous response, the $7649.50 received up to March 9 is still far below the amount that will be needed for this year's program. A mere fraction of the membership has contributed thus far, and there has been a marked falling off in the numbers of small contributors. While larger contributions are needed to carry on this important activity, the work of wardens last year was made possible, in considerable measure, by the very large number of modest donations.

The effectiveness of the work is mirrored in the greatly improved status of such birds as the Great White Heron, Reddish Egret, and Roseate Spoonbill, and by the apparent cessation of 'egging' on the Kissimmee Prairies as the result of Warden Chandler's patrols. Many people, undoubtedly, who intend to give tangible evidence of their support have merely neglected to do so; it is hoped they will correct this oversight at the earliest opportunity!

Below are printed the names of those who have contributed to this year's Sanctuary Fund, up to the time BIRD-LORE went to press. The names of future donors will be included in the next issue:

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Bird-Lore's First Breeding-Bird Census

Beginning with the September-October issue, BIRD-LORE will publish what it is hoped will be annually repeated breeding-bird censuses from various parts of the United States and Canada. So little accurate information concerning numbers of breeding birds is available that these censuses, if they are carefully taken, cannot fail to be of great value.

These counts will have value only if they are standardized as to manner of taking and reporting. Thus, no census will be printed that does not closely conform to the regulations here given. These regulations, before they were printed, were subjected to the criticisms of more than a dozen well-known field ornithologists.

Size of Areas

The areas censused must not be smaller than 15, nor larger than 150, acres; the size of area chosen is to depend on type of cover and number of competent observers available. The exact size of the censused area *in acres* must be known. Obviously, a single observer can scarcely hope to make an accurate count on 150 acres of mature spruce forest; enumerators are urged, however, to include as large areas as they can cover accurately. It is probable that in most regions, an area 50 to 60 acres in extent will be found most satisfactory.

Type of Area

Censuses are desired from two types of habitat—stable growth, including not *more* than two blocks of vegetation (as a beech-maple woods and adjacent pasture, or bayberry-marsh-elder complex and grassy salt marsh); and recently disturbed habitats, again not to include *more* than two main divisions, where plant successions may be watched and the accompanying bird successions followed (as, in recently drained marsh, recently burned woods, or recently reforested plantation). The reason for not including more than two blocks of vegetation is that if too varied an area were censused—as marsh, cedar grove, meadow, and cultivated garden together—the cover would be so complicated that it would be impossible to interpret numbers. On the other hand, it seems necessary to permit the inclusion of more than one block of vegetation so that the well-known proclivity of birds for edges of vegetation-blocks—the so-called 'edge effect'—may not be ignored. Anyone desiring to census a single, homogeneous block may, of course, do it.

Counts ought to be made as far as possible

where they may be repeated annually and, *except in highly inaccessible regions, observers are requested not to take censuses unless they feel it is likely they may continue to repeat them.* A visitor to the Canadian zone in northern Mexico should not be deterred from censusing because he will not be able to repeat next year; on the other hand, if a census is taken near St. Louis, it should be taken where it may be repeated annually. Observers are urged to make their counts on vegetation types that are characteristic in their region.

Manner of Taking

As far as possible, censuses are to be based on actual nest counts. Each area censused must be covered at least five times during the season, with at least five days between each trip, or the census will not be considered eligible for publication. *Singing males will not be considered the sole criterion as to population*, since in certain areas they have been determined as representing 40 to 60 per cent of the male population. Calling young, adults carrying nesting material, etc., *which give definite evidence of nesting*, will be considered the equivalent of nests discovered. Where possible, unmated males and females, as well as juvenile birds, should be included in the count, with their status indicated. That is, a young bird is not to be reported as an adult.

Each enumerator should be provided with a rough sketch-map of his territory, and at each survey of this territory he should mark on the map the location of a singing male, indicating whether a mate is present or not, showing presence of apparently unmated birds, location of broods out of nest, and other pertinent data. Where the area is covered by a number of observers, the block to be covered by each should be carefully determined in advance and every effort made to prevent the counting of the same bird by two observers. It is expected that by repeated coverages of areas small enough to 'control,' and the repeated marking on maps of the presence of individual birds, it will be possible closely to approximate the exact population.

Such birds as certain Owls, the Woodcock, and the Whip-poor-will may well elude the most careful searcher for nests and individuals, and for this reason they may be included on the basis of calls alone. It is recognized that a certain amount of flexibility must be dictated by common sense. However, the desirability of standardization, as far as possible, must not be lost sight of.

It should be remembered that this is a scientific survey and not a competition; variety of species, or large numbers, are not in themselves praiseworthy. *Accuracy and thoroughness are the sole criteria.*

Time of Census

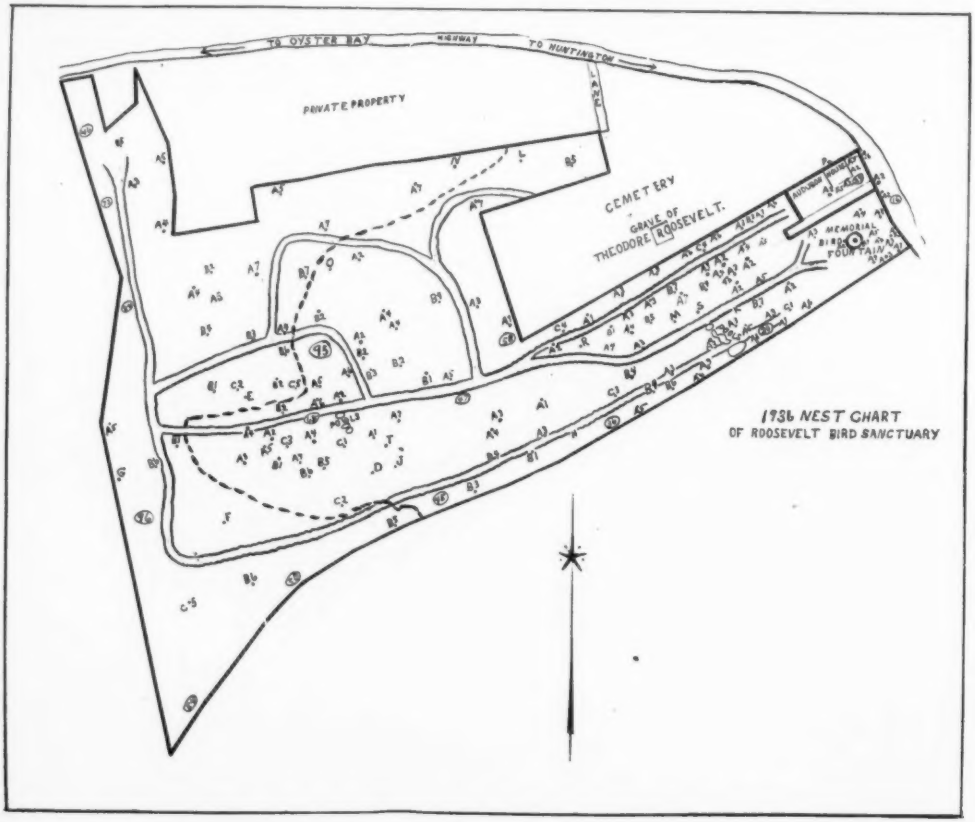
Any part of the breeding season when the absence of transients seems certain. Very early morning—soon after sunrise—is the time when song and territorial activity are most noticeable. Preparatory surveys, early in the season, should be made, to spot Hawk nests and Owl nests, and to familiarize observers with the area.

Manner of Reporting

Every report shall list the dates on which individual counts were made, with the hours during which the counts were made, and such weather data as temperature, precipitation, direction and estimated force of the wind, and barometric pressure, if available. It is very important that the habitat be carefully described in detail, in forests the kind and relative abundance of trees noted. There should be recorded the amount of shrubbery, whether primitive or second growth, the amount of disturbance by cutting, or fire, or grazing.

The birds *must be listed in A. O. U. Check-List* order, each species to carry before its name a key letter or number referring to map (see below) and after its name a number indicating the number of birds of the species present and, where possible, the number of breeding pairs.

With each report must be submitted a rough sketch-map indicating principal cover areas and locating on the map all nests found as well as unmated males, females, and young. These shall be indicated by the key number given in the tabulation. For example, the key for the Yellow Warbler may be 18, in which case an 18 is to be put on each Yellow Warbler's territory on the map. Additional symbols are to be used indicating the status of the birds. For example, "N"



Sketch-map of Roosevelt Bird Sanctuary, showing location of nests. Area east of dash-line heavily "managed" for birds. Double lines indicate trails—and, therefore, edges. See census for key.

may indicate a nest and "U.M.," unmated male. In this case, the bird + nest would appear on the map as "18-N." The total population reported shall be the highest number of each species reported. It is to be expected that five different surveys of the same area will give different results in number of birds seen. It appears to be desirable to use the extreme high-population density observed as the criterion, rather than the average or the mode. To make this number as valid as possible, extreme care must be taken not to count individual birds more than once.

Where two blocks of vegetation are included, the approximate length of the edge between them, in feet, is to be indicated.

The area censused shall be clearly indicated, either in the text or on a map, so that should someone wish to repeat the count 25 years hence, the boundaries may be determined.

The map, locating birds, that is to be filed with each census, will be filed with Science Service, Washington, D. C., and photostats may be secured at nominal prices. Details will be given later.

It is recognized that these rules make the taking of such censuses more than an easy pastime. However, a careful examination of many censuses already printed has led us to conclude that unless such counts are made with extreme care and thoroughness their scientific value is relatively negligible.

Form to be Followed

The following sample (and synthetic) report is based in part on data supplied by Dr. Eugene Swope of the Roosevelt Bird Sanctuary. Since the method of censusing for BIRD-LORE departs somewhat from Dr. Swope's, it is impossible to give a complete example based on his observations. The example is printed, however, in the hope that it may be helpful to census takers.

It is suggested that a simpler method—numbering birds serially, beginning with 1—be used than that on the appended map. Dr. Swope, of course, did not have this census in mind when he devised his system. His usage is followed here, to conform with his sketch-map. In the case of his report, *only nests* are given.

Reports to BIRD-LORE will, as noted above, show such additional data as unmated males, etc.

It is extremely interesting to observe the high population density Dr. Swope's management has built up.

Census

Location: Roosevelt Bird Sanctuary, Oyster Bay, L. I. **Size:** 12 acres. **Cover:** As indicated on map. Area east of dash-line intensively 'managed' many years, with introduced plants of many species, including (name species) to attract birds; area west of line more lightly grown with (name principal species). **Water:** Numerous artificial pools and miniature waterfalls. **Edge:** Indicated by double lines—trails and paths—on map. Total —— yards. **Censuses** (hypothetical): Preliminary trips, April 10, 28, May 5, 17, 21, 28. **Coverage:** By one observer, June 1, 4.30–9 A.M., clear, SW-5 m.p.h., 63°–71°; June 6, etc., etc.; June 12, etc., etc.; June 17, etc., etc.; June 23, etc., etc.; June 29, etc., etc. Key letters preceding names of birds, identify their symbols on the map. Numbers following names show the number of nests for each species.—N, Green Heron, 1; D, Ring-necked Pheasant, 1; B2, Mourning Dove, 6; O, Black-billed Cuckoo, 1; P, Chimney Swift, 1; K, Hummingbird, 1; E, Flicker, 1; F, Downy Woodpecker, 1; C3, Crested Flycatcher, 1; R, Wood Pewee, 1; B3, Blue Jay, 4; B7, Chickadee, 3; G, White-breasted Nuthatch, 1; A5, House Wren, 14; A3, Catbird, 23; B4, Brown Thrasher, 6; A2, Robin, 16; A4, Wood Thrush, 17; S, Yellow-throated Vireo, 1; C5, Red-eyed Vireo, 2; C2, Black and White Warbler, 2; C1, Blue-winged Warbler, 2; T, Black-throated Green Warbler, 1; U, Chestnut-sided Warbler, 1; B6, Oven-bird, 5; H, Northern Yellow-throat, 1; M, Redstart, 1; B5, Baltimore Oriole, 5; C4, Purple Grackle, 2; A7, Scarlet Tanager, 9; L, Goldfinch, 1; B1, Towhee, 6; A6, Chipping Sparrow, 7; A1, Song Sparrow, 6. Total, 31 species, 154 nests.

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Those to whom libraries are accessible, are urged to acquaint themselves with the following discussions of censusing methods. Not only will the information included in these papers be helpful; it will increase the interest of the work.

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COLLECTING RESOLUTION ADOPTED BY BOARD

The following resolution on collecting of birds and their eggs was adopted by the Board of Directors of the Audubon Association at a meeting held in 1936. It was brought to the attention of the Bird Protective Committee of the American Ornithologists' Union, and it is hoped that that leading organization will act favorably on this subject at its meeting in the fall of 1937.

Evidence obtained by the National Association of Audubon Societies shows that within the United States the collection of wild birds and their eggs is subject to abuses opposed to sound conservation and *even threatening the local or general survival of various species.*

The data indicate not only illegal practice, but also that certain procedure now technically legal is, nevertheless, against public interest. The Audubon Association does not advocate the principle of complete prohibition of scientific collecting, as applied to all species of birds and their eggs, believing that such legislation might be prejudicial to research of great conservation and scientific value.

Among the aspects requiring present consideration are the following:

1. *Lack of enforcement* of existing state and federal laws, leading to their frequent infraction.

2. *Inadequate Federal and State Laws*, including in a few instances no non-game bird protection whatsoever beyond that afforded by the Federal Migratory Bird Treaty Act.

3. *Inadequate Regulations* in almost all states.

4. *Commercialization*, as evidenced by the distribution of current price-lists of specimens of birds and eggs.

5. *The Need of Adoption of a Code of Ethics* by ornithological and oölogical societies; a code which no member in good standing would choose to violate; a code which would extend restrictions to collecting; even for scientific purposes, of certain threatened species, whether or not protected by state or federal laws.

With the object of marshaling public opinion, and of encouraging law enforcement, the enactment of adequate and more nearly uniform legislation and issuance of adequate regulations, the National Association of Audubon Societies adopts the following general code pertaining to the subject of collecting, as distinguished from laws and regulations relating to the hunting of game.

Privilege

1. Collection of specimens of wild life for scientific, educational or other purposes is not an inherent right, but is a privilege to be granted by the sovereign states, subject to provisions by federal law.

Claim to Privilege

2. The Association recognizes the valid claim to the collecting privilege of museums and other educational institutions and of properly qualified students, but holds that it should be in all cases granted only after the need and the object have been specifically stated and have been judged worthy of the privilege.

Conditions of Granting Collecting Permits

3. (a) Both federal and state permits should *completely exclude certain threatened species from the list of those which may be collected.*

(b) The list of those species which may not be collected should be printed on the federal and state permits annually.

(c) It should be the duty of the permit-issuing authorities to place upon the applicant for a permit the burden of proof as to the need and desirability of the collection.

(d) In granting both skin and egg-collecting permits, the federal and state authorities should exercise their power to vary the terms according to circumstance, so that permission to collect may be limited with respect to locality, season, number and kind of the specimens to be taken.

(e) Federal and state permits should in no case be valid for more than one year, subject to renewal at the option of the permit-issuing authorities.

(f) All individuals granted a collecting permit should be required to furnish personal endorsements from two or more persons of recognized scientific standing.

(g) Each permit-holder should be required to submit to the permit-issuing authorities an annual statement listing all specimens collected.

(h) Federal and state authorities should be required to make available to the public at all times the names of all permit-holders and the list of specimens collected by them.

(i) Public hearings are recommended with reference to the need of protecting species of questionable status.

(j) Abuse of the collecting privilege should result in revocation of permit and in confiscation by the permit-issuing authorities of all specimens illegally taken or held.

Commercialization

4. Commercial traffic in specimens of birds and their eggs should be expressly prohibited under

the terms of federal and state collecting permits, with the proviso that all transactions involving sale, purchase or exchange require specific sanction by federal and state authorities after suitable investigation of each instance in which such privilege is sought; with the further proviso that the lists of specimens so sold, purchased or exchanged be made available to the public at all times by the permit-issuing authorities.

MODEL LAWS

5. The legislatures of states which have thus far established no control over the collecting privilege should enact appropriate laws in general harmony with the best provisions of other states and of the federal government.

THE SECOND NORTH AMERICAN WILDLIFE CONFERENCE IN ST. LOUIS

There was evident at this meeting, March 1-4, 1937, inclusive, a great change in dominant attitude of mind as compared with similar conferences of but a few years ago. The former very evident preferential interest in certain categories of animal life, and particularly in game species, was on this occasion very much submerged, and the majority interest seemed to be in the preservation of the great American outdoors for the benefit of Mother, Dad, and the kids: its preservation for their social and material benefit.

It seems to me that we are on the verge of a great increase in governmental activity along true conservation lines; this as a result of a manifest tendency on the part of both Federal and state agencies to reconsider the wisdom of long-established practices, and turn increasingly to biologists for advice as to facts on which to base conservation policies. Should this be so, the development is of tremendous significance.

There were many excellent papers given at the St. Louis conference. Mr. J. N. Darling, who was reëlected President, spoke in his usual dramatic and convincing manner, arousing and maintaining the interest and enthusiasm of the delegates, and carried the program through to harmonious conclusion. Among the outstanding papers presented were those by Professor Aldo Leopold entitled 'Research Program of the American Wildlife Institute'; by William L. Finley on 'Fish Protection and Industrial Use of Water'; and by Dr. William R. Van Dersal on 'The Dependence of Soils on Animal Life.'

Announcement was made of a plan for a National Conservation Week in February, 1938, as a means of further arousing interest, as well as raising funds for the program of the General Wildlife Federation.

The following resolutions were adopted by the Federation:

Federal aid should be extended to state wild-life projects by ear-marking funds now received by the United States Treasury from the 10 per cent excise tax imposed on the sale of sporting arms and ammunition.

The CCC, United States Forest Service and Park Service should conform to sound policies of wild-life management.

Any modification of Federal law relaxing restrictions on importations of livestock from countries where foot-and-mouth disease now exist should be vigorously opposed.

The Federal and State Governments should make adequate appropriations for wild-life research.

The open season for trapping should be not more than two months in the prime fur season, issuance of special licenses for trappers only and passage of laws to protect fur bearers.

The officers elected by the official delegates for the ensuing year were as follows:

J. N. Darling, Des Moines, Iowa, President; Davis Aylward, Peabody, Mass., State Game and Fish Commissioner of his State; W. L. Finley, Portland, Ore., naturalist and author; and Dr. W. B. Jones, Montgomery, Ala., geologist, Vice-Presidents.

Directors: Charles Giaque, Edgerton, Ohio; William J. Aaberg, Madison, Wisc.; Justus H. Cline, Stewartsdraft, Va.; Mrs. H. G. Bogert, Akron, Colo.; George Grebe, Kuna, Idaho; Judge Lee Miles, Little Rock, Ark.

Regional Directors: John L. Curran, Providence, R. I.; Colin Reed, Washington, D. C.; C. P. de la Bare, Blacksburg, Va.; Dr. W. B. Jones, Montgomery, Ala.; Edward K. Love, St. Louis, Mo.; Louis Dunton, Fort Wayne, Ind.; Bella L. Foresman, Lansing, Mich.; W. J. Tucker, Austin, Texas; Harold Thomas, Des Moines, Iowa; Charles N. Fahr, Salt Lake City, Utah; W. L. Finley, Portland, Ore.; George E. Walton, Oakland, Calif.; Charles Plummer, Cheyenne, Wyo.—J. H. B.

BOOK NEWS AND REVIEWS

ADVENTURES IN BIRD PROTECTION: AN AUTOBIOGRAPHY. By THOMAS GILBERT PEARSON. D. Appleton-Century Co., New York. 459 pp. $3.50.

It is one of the privileges of youth calmly to ignore the struggles of a past generation, and it is the duty of those no longer young (and unfortunately that applies to Dr. Pearson as well as to a good many of us) to place on record such struggles and accomplishments before they are forgotten. This latter task Dr. Pearson in his new book *Adventures in Bird Protection* has faithfully performed.

Younger people of today have little conception of what the pioneer problems in bird protection were really like, how they were met, and when solved how they became accepted as they are today; incorporated in the law of the land or added to the established culture of the American people. For we are more sensitive to natural beauty and more alive to its harmful exploitation than we were a generation ago. Sad as the picture is today, this book shows us how much worse things might have been. A long view like this will encourage the most pessimistic to further efforts.

The National Association of Audubon Societies was for many decades bound up in one way or another with almost every forward-looking activity in avian conservation, and for almost a life-time Dr. Pearson *was* the Audubon Society. Here is a record to be proud of and in this, his autobiography, we gain a closer insight into the darker chapters of wild-life mismanagement than in any other book that we have seen. Almost any member of the Biological Survey could give us a full chronological account of the period (1895–1935), but only Dr. Pearson could give us the humanistic factors involved, could clothe his story with a rare sense of humor, and produce the present volume.

It took an iron constitution, unfailing energy, and a seemingly hopeless optimism to accomplish what Dr. Pearson did, even with the backing of such men as William Dutcher, George Bird Grinnell, and many others. There is no more disheartening work in this over-industrialized age than attempting to preserve natural monuments, be they birds, fish, forests, or scenic masterpieces. We seem to go forward three steps and then are pushed back two and a half. What we build up with one hand, we destroy with the other. Only the long retrospect which we find in Dr. Pearson's book can bring us the very necessary cheer, for in reading these pages anyone must realize how much worse off our fauna would be today if we had not had men of vision to lay the groundwork of conservation.

And so first and foremost, this is a cheerful book, full of that aggressive optimism, that scorn of all obstacles that was, and is, Gilbert Pearson's sword and buckler. He thrust forward when less hardy souls hesitated on the threshold. If he was kicked downstairs, as he almost literally must have been time and time again, he returned to the charge next day, his head "bloody but unbowed." These pages tell of a one-track idea evolved by a far from one-track personality, and at the same time they relate the unconventional history of the National Association.

But why attempt to review the book in detail? All those interested in bird protection will want to buy it; borrow or steal it if they can't.

Dr. Pearson's early life, sketched in the first three chapters, was much like that of many other Americans who have 'made good.' Our author might have become a 'Captain of Industry' but he chose to be a champion of birds. We read about the deplorable state of bird protection in the Southeastern States thirty or forty years ago, the utter lack of backing from the courts, even when the most flagrant law-violators were caught and brought before a judge. Perhaps we may hear a bit too much about North Carolina, but we are taken much farther afield in later chapters, visiting some of the most interesting far corners of our country, wherever rare birds needed a helping hand. And in the last chapters we are told of Dr. Pearson's work in organizing the International Bird Protection Committe e in Europe.

Dr. Pearson was always an easy, forceful speaker and his style of writing is equally pleasant, and the vast fund of anecdotes fostered by his retentive memory makes nearly every page sparkle.

During his long career Gilbert Pearson came into contact with nearly all the great names in ornithology and bird protection both here and abroad, as well as game commissioners, wardens, congressmen, legislators, and government officials in Washington. But he was never an armchair conservationist. He knew his facts because he got them at first hand from market-shooters, 'cracker' hunters, guides, and fishermen, even from the much-maligned wealthy club sportsmen. He had the broad point of view, and his policy was never to be antagonistic to those who enjoyed recreation with the gun unless that recreation seemed to involve the dangerous reduction of a species or a whole group of birds like our water fowl. Success came from a friendly approach, from tolerance, from endless patience with the foibles of that most inconsistent animal, *Homo sapiens*.

And so we say to the readers of BIRD-LORE, order now before the edition is exhausted! —J. C. P.

THE COMPOSITION AND DYNAMICS OF A BEECH-MAPLE CLIMAX COMMUNITY. By ARTHUR B. WILLIAMS. Reprinted from Ecological Monographs 6:317-408, July, 1936. Republished 1937 by Cleveland Museum of Natural History. 50 cents.

This paper is a fascinatingly thorough report on a four-year study of biological events on a 65-acre tract of climax forest located five miles south of Lake Erie and twice as far east of Cleveland, Ohio. The approach in this investigation was to the biotic community as a whole with particular emphasis on vertebrate animals and major plant forms.

Mr. Williams began by making careful measurements of the plant and animal content of the area, qualitative and quantitative, with an analysis of seasonal and yearly variations in numbers and activity. With this as a foundation he developed the relations of the important species to each other and to the community as a whole, described the territorial and food relations, analyzed the major trends and succession stages, and evaluated all environmental conditions—soil, climatic and biotic—as to their effects on the community.

The author skilfully applies basic biological laws and facts in the solution of the innumerable problems which always present themselves in any population study. He gradually constructs a convincing picture of life-events on his area by (1) measurements —qualitative and quantitative—of its inhabitants, (2) by judiciously applying to the solution of each unit problem pertinent findings of research specialists in each of the wild-life fields concerned, (3) by carefully gathering together in proper sequence the key threads to the web of existence as it unfolded, (4) by using rare judgment in the evaluation of the picture as revealed and (5) by cautious interpolation to complete that portion of the truth which remained unrevealed.

Studies of this type are all too rare. Few research workers have the qualifications necessary to organize such a population study and execute it by consistent application over a period of years. It is much easier to specialize than to travel the long, rough road of preparation necessary to unravel a population study—to make the broader ecological approach to the understanding of the more complete picture of biotic relationships.

This review should not give the impression that Mr. Williams' paper is too technical and too involved to be of interest to the layman. Any amateur who appreciates the out-of-doors should be fascinated by this marvelous treatment of life-events in a forest tract—in an area having much in common with similar ones visited by bird-lovers the country over. The approach is the naturalist's approach—the viewpoint that of the rounded biologist, not that of the specialist.

And any naturalist—from the beginner to the most learned—should be thrilled at the unfolding of the secrets of the living things on this area—to learn how much of extreme significance exists everywhere about us—and how little we really see or how likely we are to misinterpret because of narrowness of vision.

The reader who thinks of scientific reports as dull and lacking color, will be pleasantly

surprised with the literary beauty of the section on aspection—the parade of plant and animal happenings through the seasons. Those reared surrounded by a mass of city skyscrapers will appreciate the multistoried bird and mammal habitats—life niches—occurring layer upon layer from subterranean zones to above the tree-tops.

The conservationist will marvel at how unstable plant and animal habitats can be—how little suspected influences can remake the forest microcosm, and how narrow management for one animal with disregard for the interests of its neighbor species, can wreak havoc in a once balanced community. He will likely be shocked by how far reaching can be the influences of such tiny mammals as mice and shrews.

Those with a flair for the dramatic should revel in the dynamics of succession—the rise of one population and the fall of another—how dominant species not only condition their own environment but deal the cards and shuffle the life chances of subdominant forms. Worth noting are the food chains and the biological rules which budget and ration the life-giving resources of the forest among its inhabitants.

It takes a report of this sort to show us how short-sighted we really are—how little we think—and how much we speculate without considering the facts. We need to discover how attractive scientific data can be made when properly presented in well-made tables and charts and graphs—facts which reveal what the environment really is—climatic, edaphic and biotic factors—and the character of the plant and animal populations which come and go therein.

The merits of this paper so far outweigh its weaknesses, that one hesitates to mention a few apparent shortcomings for fear of unduly emphasizing them. Some may feel that the research effort of this work was spread over such a wide field that no one plant or animal group received sufficient space—but this can always be said of any population study dealing with the whole biotic community. A surprisingly complete biological picture of the area is presented in the space used. The biotic relationships revealed by the broad ecological approach make this paper far more valuable than the numerous publications already available which unfortunately give only a partial picture, due to specialized treatment and narrowness of approach.

The trapping method used by Williams in measuring his small mammal populations is clearly unreliable. The small size of the plots used suggests that the influx may have exceeded several times the actual population of the plots themselves—as a series of contiguous check-plots would undoubtedly have demonstrated. In the treatment of the breeding birds the ideal ark-like picture is presented of a population composed of equal numbers of each sex and *all* individuals breeding. It would seem that some recognition should have been made of the usual situation in bird populations of an unbalanced sex ratio with as high as 5 per cent to 20 per cent of the total population unmated and non-breeding.

Biological interpretations are difficult assignments and frequently debatable. Hence, it is not surprising to find among the many recorded in this paper a few which may be questionable. It would seem a little reckless to say "the probability is that little if any change would be apparent" if the less common mammals were removed from the area, or that most of the bird species classed as permanent residents could probably "get along quite well in the absence of vegetable provender." The disappearance of chipmunks during a fall and winter of low food supplies could well be due to outflux rather than to starvation or low winter survival.

It would also seem unlikely that "the lack of fear" in the red eft salamander can be explained by its being "unpalatable" and hence not molested by predators. The scarcity of salamanders during the drought years would seem to be more apparent than real, due to either outflux or the use of subterranean habitats.

The treatment of the vegetation of the area and the plant ecology is excellent, though several inconsistencies occur in the pages relating to the flora. The paper includes an excellent bibliography of 66 references. However, many references which would seem most pertinent to the area in question or to a study of the scope of the present one, are omitted.—Lawrence E. Hicks.

BIRD MIGRATION. By A. LANDSBOROUGH THOMSON. H. F. & G. Witherby, London, 1936. 224 pp. Illustrated. 5/-.

This admirable addition to Witherby's series of 'Bird-Lovers' Manuals' should be welcomed by all who are interested in migration. Long the foremost British student of the phenomenon, Mr. Thomson here presents a report that brings recent researches—on both sides of the Atlantic—down to date, and synthesizes them in a thoroughly lucid and entertaining manner. It even includes the recent experiments on 'homing' in birds, by Rüppell, which were discussed in the last issue of BIRD-LORE. There is no better introduction, in English, to the problem of bird migration.—W. V.

SONGS OF WILD BIRDS. By E. M. NICHOLSON and LUDWIG KOCH. H. F. & G. Witherby, London, 1936. xxxi+216 pp. Illustrated. With 2 gramophone records, 15/-.

Without even an acknowledgment of the prior pioneer work on the part of Albert R. Brand, these authors have taken over his idea of a book-record combination on bird-song, even to the title of his first volume! Whether or not an ethical issue is involved, the practice seems to be singularly lacking in courtesy, and the results cannot be unreservedly praised.

The records, reporting the music of such familiar, well-loved species as the Nightingale, Hedge-sparrow, Blackbird, Cuckoo, and Robin, seem to this reviewer to be superior to the records produced in this country. There is, on the whole, less interference by extraneous sounds, and the quality of the notes seems more natural. Apparently the recording was done by one of the commercial gramophone companies (Mr. Brand has had to develop his own equipment), and the material of the discs themselves, while it is not unbreakable, seems better than that used here. Certainly, to one who knows these birds only through the printed page, both scientific and non-scientific, it is a pleasure in this way to make the acquaintance of such famous songsters.

Not much can be said for Mr. Nicholson's text. It is apparently a 'hack' job for him, and as such lacks the fine, informed, imaginative quality one has come to expect from his publications. To use an Anglicism, it seems to be decidedly 'old hat.'—W. V.

THE WILSON BULLETIN (December). —'Fall and Winter Behavior of Mockingbirds,' by Amelia R. Laskey, gives an extensive series of observations on this species in the vicinity of Nashville, Tenn. Birds had been marked with colored leg-bands for exact identification, and since the notes are thus records of particular individuals, they are unusually interesting. 'Feather Arrangement, Development, and Molt of the Long-billed Marsh Wren,' by Wilfred A. Welter, discusses the subject in some detail. Mr. Welter disagrees with Dwight and Stone on the matter of postjuvenal and prenuptial molts of this species. While the reviewer has not gone into the matter exhaustively, he is inclined to disagree with Mr. Welter concerning the prenuptial molt. Taking the species as a whole, a large series of eastern and southeastern birds in the American Museum of Natural History shows many May birds to be in such fine, fresh plumage, as compared with February, March, and April skins, that a molt must certainly intervene, and several March birds from Florida and even a May 6 skin from South Carolina leave no doubt that such a molt does occur, at least in parts of the range. Further study would seem to be imperative before final conclusions are expressed. 'The Occurrence of White Herons in the Youngstown, Ohio, Region,' by M. B. Skaggs, discusses the local status of the American Egret, the Little Blue Heron, and the Snowy Egret over a period of sixteen years. An increase in numbers appears to be taking place in recent years. 'Wildlife Casualties on the Highways,' by Dayton Stoner, contains some interesting figures from the observations of the author and others. The data are considered too meager to justify any broad conclusions. A good bibliography is appended. 'John Marion Priour,' by Frederic H. Kennard, presents a biographical sketch of a naturalist of Texas. 'Endemism and the American Northwest,' by T. T. McCabe, presents a speculative dissertation on invasion, adaptability, and sensitivity to environment as opposed to isolation, mutation, and selective evolution. 'Further Notes on the Constancy of Catbirds to Mates and to Territory,' by Geoffrey Gill,

supplements an earlier article in the Wilson Bulletin for June, 1935. 'Bird Notes from the Lake Francis Region of Southern Minnesota,' by Ira N. Gabrielson, gives an annotated list of species observed during two weeks of August, 1915. 'General Notes,' the editorial page, book and periodical reviews under the heading 'Ornithological Literature,' and an author and species index to the current volume of the Bulletin complete the number. —J. T. Z.

THE CONDOR (January–February).—Mr. Sugden has a stimulating short discussion of the use of wings by Flickers and Gulls to maintain their balance on perches to which their feet are not suited, the former in berry bushes, the latter in fruit trees. What is meant is a Hoatzin-like use of the wings as rigid supports, upon the surrounding foliage. In point of fact, a book might be written on the use of wings for purposes other than independent flight, and one wonders how large a counter-current there may be, eddying secretly, infinitely slowly, back from the supreme success of vertebrate flight, toward other adaptations of the fore-limbs. The flight structure of birds demands over-economy of the feet and the gripping power, in spite of exceptions like the great hand-like feet of the Cormorants, and this in turn creates beautiful series of mechanical or reflexive balance or stabilization adjustments, like the gripping of the toes when the legs are flexed, or the use of the head as a counterweight, which is seen so amazingly when a *Cyanocitta* Jay, in particular, is perched on the finger and the arm moved about like a swaying branch. But all along the margins of attainment there are less beautiful instances of grotesque effort to pass the adaptive boundary. Western Ruffed Grouse in the North, in winter, always seem to the reviewer an instance of a bird betrayed by over-shot whirring-flight structure, as they clamber laboriously for days at a time through the bare tops of aspens, or flutter desperately at the elevated umbels of *Heracleum lanatum*, the dry, hollow stems of which will not support a 25-ounce bird. But to return to the Flickers and Gulls, Mr. Sugden says, "Only during periods of unusual conditions, such as a long severe winter, or over-crowding . . . is the mettle of the individual tested. Those that have the superior intelligence to overcome the handicap by resorting to an abnormal method . . . increase their chances of survival. If this method becomes the usual routine . . . the basis for a change in structure might be laid." Yes—but what distant wandering on false paths nature permits. Even on their present ranges Grouse have been trying to learn to hover at the umbels of *Heracleum lanatum* since the end of the Pleistocene. They do it incredibly badly, and play out in a few moments. If they could modify their fine sense of the stability of things enough to press a vestige harder, as they must often do by accident, the fragile stem would be borne gently to the snow, and the seed could be eaten as comfortably as kinnikinic leaves. Adaptive selection by trial and error is a simple and satisfactory faith, but—is the evidence more impressive of the beautiful adaptations which seem to have been responsively developed, or of the obvious ones which are missed?

John S. Garth writes one more brief account of the wonders of the guano islands, and Dr. Loye Miller a pleasant running account of what amounted to a single ornithological cruise from California to the east coast of Panama and return. One wishes the latter might have been expanded to fill the issue, so interesting are its details. Nothing comes amiss that bears on the jumble of *where*, *when*, *why*, and *which*, that is our knowledge of *Diomedea nigripes*. Absence in February and presence in April, off Lower California, matches my own experience for two years off central California, but *scarcity* in April must mean range-margin. Indifference to ships in the spring is peculiar, for I can always attract an Albatross or two from the wake of a liner or transport, often with galley-refuse in their gullets. It would be interesting to know whether the southern April birds showed the inexplicable white belly phase. Another topic of endless fascination, the northering wintering margin of the Red Phalaropes, is shadowed forth. A few flocks were picked up off Magdalena Bay, but in the Gulf of Tehuantepec "they were rafting in uncountable numbers. . . . They were not migrating, but seemingly were in winter quarters out in the open gulf, a notably stormy area. . . ." I have no doubt they were on permanent wintering grounds,

if such there be, but rafting does not prove it, California experience to the contrary. In one whole autumn among these birds off California, and many casual encounters, I never saw a raft, yet as early as October and as far north as 52°, after being passed all day by straight-flying flocks heading South, I got into a raft of some 10,000 birds off the Storm Islands in Queen Charlotte Sound.

It is impossible to go into the many other necessarily fragmentary contributions of this paper—the scarcity of Tropic Birds, the absence of Wood Ibises on the Panamanian coast, the latitudinal succession of the Gulls, the abundance and variety of Herons at Chiriqui. After special scrutiny of leg-color in life, Dr. Miller is inclined to question the records (his own) of *Florida cærulea* in California, though the only alternative seems to be an otherwise unknown greenish-yellow-legged stage in the youth of *Egretta thula*. —T. T. McC.

Executive Director Visits Southwestern States

Mr. John H. Baker spent four weeks in January and early February in Louisiana, Texas, Colorado, New Mexico, and Arizona. He addressed eleven audiences, of from 100 to 800 each, in Houston, Huntsville, College Station, and Dallas, Texas; Denver, Colorado, and Tucson, Arizona. He broadcast on the radio in several of these cities. Mr. Baker spoke on the subject 'Why Save Our Wild-life?' illustrated with motion pictures of birds in the southern sanctuaries.

The Association is indebted to the following organizations, which enthusiastically sponsored the meetings and succeeded in producing audiences representing the various groups in each community interested in wild-life preservation: The Houston Garden Club; The Houston Outdoor Nature Club; Sam Houston State Teachers College; Texas Agriculture and Mechanical College; Dallas Nature Study Club; Dallas Ornithological Society; Texas Geographic Society; Dallas Garden Club; Program Committee of S. M. U.; Colorado Bird Club; Colorado Federation of Garden Clubs; Tucson Natural History Society; and to the following individuals, who took upon themselves the burden of the detailed preparations: Mrs. John C. Townes, Jr.; Mrs. George Hill; Mrs. Palmer C. Hutcheson; Alston Clapp, Sr.; Joseph M. Heiser, Jr.; Dr. Walter P. Taylor; Dr. Don O. Baird; Mr. and Mrs. Jerry E. Stillwell; Dr. W. E. Wrather; Dr. E. P. Cheatum; Victor Schoffelmayer; Alfred Bailey; Dr. Charles T. Vorhies.

Mr. Baker spent considerable time in the field, finding, among other things, in the Gulf Coast region, a group of eight Whooping Cranes. Much attention was given to official announcement and getting under way of the Audubon Desert Bighorn Fellowship research work, under the supervision and direction of Dr. Vorhies at the University of Arizona.

Reporting on his observations, Mr. Baker said, "When I first went to Colorado as a rodman for the Biological Survey in 1912, I was fascinated by the colonies of prairie dogs, then very well distributed throughout eastern Colorado. On this recent trip, although I traveled through an area which was the prairie dog's inherited range, *I did not see one*. There would seem to be a connection between this observation and the fact that dust storms are nowadays very serious in that region.

"I was dismayed, seeing the manifestly over-grazed condition of the bulk of lands in southern Arizona, to think that man could be so foolish as to believe that those grazing ranges might be restored to productivity through destruction of rodents rather than through temporary withdrawal of cattle and regulation of the number of head of live-stock permitted on a given area.

"I was alarmed, when in the Valley of Texas, to witness the extent to which, since my last visit there in 1926, the brush had been cleared. 'Brush' down there means mesquite, huisache, ebony, a sprinkling of Spanish bayonet, and various other forms of plant-cover. If the brush is to be allowed to disappear from that country, with it will go quite a number of strikingly beautiful birds and other animals that are naturally associated with it and occur nowhere else in the United States. I would encourage the citizens of the Valley of Texas to set aside

as permanent sanctuaries certain stretches of brush, resacas, and exposed water areas near the Gulf in order that they, their children, and visitors may continue to enjoy and appreciate those birds and animals which are dependent for continued existence in the Valley of Texas, on the preservation of suitable environment. I am sure that visitors from the north, allured perhaps by rumors of 'Romantic Old Mexico,' would be attracted to the Valley of Texas far more by Green Jays, Black-bellied Tree-ducks, Red-billed Pigeons, and Derby Flycatchers, than by fields of beans and onions."

Mr. Baker attended the Wildlife Conference in St. Louis, March 1-4, spoke at the annual meeting of the Florida Audubon Society in Winter Park on March 6, and spent some two weeks with all Florida Audubon wardens on patrol.

NOTES FROM FIELD AND STUDY

Unprecedented in Bird Annals

Photo by Hayden Anderson

For several weeks bird-lovers have been traveling to Gorham, Maine, to see a songbird that never before has been recorded as found east of the Mississippi River. His most eastern previous record is Minnesota.

A journey of over 2000 miles must have been made by this Rosy Finch (*Leucosticte tephrocotis littoralis*). We are amazed at the courage and endurance of this bird in its long migration, and we wonder at the good luck which must have attended it as it winged its way from its winter home in Utah, Nevada, or Colorado to a feeding-tray for birds operated by Mrs. Verdell Waterman, of Gorham.

The bird arrived some time before Christmas. Since then he has spent several minutes daily at the feeding-tray, sometimes taking as many as seven meals in twelve hours. Although he is seen in company with English Sparrows and Purple Finches, he prefers to eat alone and enforces that fact upon the other birds so emphatically that they allow him to do so.

The only seed that he eats is a rather large white seed found in a commercial bird-seed mixture. He splits it open with his sharp, relatively stout bill and takes the meat, leaving the empty hulls on the tray.

He is not at all shy, and while he is cracking seeds for his luncheon or breakfast can be easily observed by anyone who is just inside the window.

On February 5 he was identified by Mrs. William Roberts, of South Street, and by the writer.

On February 22 he was observed by Mr. Tabor of the Museum of Comparative Zoölogy of Cambridge, but because of the heavy rain exact identification could not be determined. But on March 7, Dr. Alfred O. Gross, of Bowdoin College, made the final identification and banded the bird.

The Leucosticte is 7 inches long and has a wing-spread of about 12 inches. His color combination is rather odd: His head is gray with a few black feathers just above and below the bill. This gives prominence to the very light-colored bill of the bird, so that when we look at him from the front this appears to be white. Below the gray head the feathers of the back and breast and belly are a deep rufous brown but a brown that reflects a soft deep rosy pink in the sunlight.

His rump feathers, flanks, and the tips of the secondaries and tertiaries of the wings are soft rosy pink.

In the gray light of a winter's day he is rather an ordinary brown bird, but when the rays of the sun strike him he gleams like an opal.

Will the same urge that sends the wild Geese north, and the Robins back to Maine, seize him, and in a few days cause him to start for the timberline in the far Northwest where the birds usually nest?—JESSIE L. KEENE, *Gorham Normal School, Gorham, Maine.*

Mating of Spotted Sandpiper

An editorial in the issue of BIRD-LORE for March–April, 1936, stated, concerning the Spotted Sandpiper, that, "So far as we know, its mating has been witnessed by only one ornithologist." This statement is the direct stimulation that has led to the publication of this note, taken from the notebook in which it was recorded on the day when the observation described in it was made:

At the Central Experimental Farm, Ottawa, Canada, I saw two Spotted Sandpipers copulate at about 2 P.M. on June 1, 1932, which was a hot, sunny day. The birds were in a large, dry, plowed field, at a distance of about 1300 feet from Dow's Lake, the nearest body of water.

One Sandpiper, with half-opened wings, ran along a furrow toward the other. As it ran it cried slowly, 'Pe-e-e-ep, pe-e-e-ep, pe-e-e-ep,' etc., in a tone lower and softer than that of its usual call. The other bird answered briskly with the usual call, 'Peep, peep, peep, peep, peep,' ran toward the first bird and jumped at once on its back. It remained there for about ten seconds (estimated), maintaining its position by fluttering its wings. Then it jumped down to the ground and the pair separated until they were 3 to 4 inches apart. Immediately they became rigid and immobile.' After standing thus for a minute or two, they both flew away.—HARRISON F. LEWIS.

Aquatic Quail

On January 2, 1936, I was scouting around Oakland Lake, Bayside. There was about 5 inches of fine snow and the weather was cold. In some places where there were springs the snow was gone.

I was near one of these springy places, about 10 paces in diameter, with grass and water plants dotted here and there. In the middle I saw two brown objects that looked out of place. Bringing the field glasses into place, I saw two Quail, or Bob-whites. Scanning the rest of the space, I discovered 16 in all, resting with their feet in the water. I have spent 35 years roaming the woods and I never noticed this before, nor have I read of it.—MERLE V. KEITH, *Bayside, N. Y.*

A Whistling Swan in Eastern New York

On November 4, 1935, a Whistling Swan (*Olor columbianus*) was shot by a hunter on the Mohawk River near Schenectady. The bird was brought to me, a taxidermist, for mounting. Since specimens of this bird have seldom been reported in eastern New York, considerable interest attaches to this find.

The bird was a young male, probably in its second year. The bill was flesh color, head and neck grayish, remainder of the plumage white, washed with gray in a few places, the feet a dark gray. It had 20 tail-feathers.

Identification was confirmed by Dr. Dayton Stoner, state zoölogist, who now has the skin.—JOSEPH JANIEC, *Schenectady, N. Y.*

Does the Towhee Know His Own Name?

It has always been my habit to call *Pipilo erythrophthalmus* by the familiar name Chewink—a habit acquired some years before the A. O. U.'s first 'Check-List' made Towhee his official vernacular name. However, I often have occasion to use the approved designation, and then I follow the analogy of the other name and say "To-wheé," with the accent on the last syllable. It is my impression, too, that most people so pronounce the name, but of that I am not at all sure, and if my memory serves me, no less an authority than William Brewster pronounced it *tow'ee*. When the question of the proper pronunciation came up the other day, I referred to the dictionaries. But I got no comfort there, for the Inter-

national and the Standard gave *tow'hee, to'hee;* the Century, *tow'hee;* and Murray's New English Dictionary, *tow'hee, tow'ee,* the last supporting Mr. Brewster. (I have reduced the systems of pronunciation to a common denominator.) Presumably the Century pronunciation was set by Elliott Coues, and the International by Willard G. VanName and Wilfred H. Osgood, whose names appear in the preface. In spite of all these excellent authorities, I still felt unsatisfied, for none of them agreed with what I considered the very best authority, *Pipilo erythrophthalmus* himself. I felt convinced that those who first transliterated the Pipilese into English must have come nearer to the original.

Accordingly, I consulted some of the older authors. The earliest use of the name that I could discover was by Mark Catesby, whose 'Natural History of Carolina,' published in 1731, in its description of "*Passer niger, oculis rubris*" (a pre-Linnæan name for our bird), gives "Towhe-bird" for the vernacular name. No indication of the pronunciation is given there, of course, but it is significant that the plate for the species is captioned "The To-whe Bird," from which it seems fair to assume that Catesby, who doubtless got the name from the country people, followed the bird's own pronunciation.

But the name Towhee is probably much older than Catesby. It is not so very different from Topsell's "Chuwheeo" of *circa* 1614, recently brought to light by Bayard H. Christy (*Auk*, 1933, pages 277, 278), a name that must have been given by the Indians. Topsell's name may also be the original of the folk-name 'Chewink' and perhaps of that other folk-name used in the South, 'Joree.' None of these names uses that awkward aspirate directly before the vowel of the last syllable. Nor does it appear in Nuttall's "Towwee Finch" nor in William B. O. Peabody's "tow-wee bunting" in his 'Report on the Ornithology of Massachusetts' (1839). It is somewhat surprising, therefore, that Audubon gave the note "from which it has obtained its name" as *tow-hee*, and that Wilson wrote it *tow-he*, though one might guess that both these authors simply used the onomatopoetic name they found in print and divided the syllables without very careful consideration. At least, Wilson got the accent right.

Aretas A. Saunders, in his 'Guide to Bird Songs,' gives a very good rendering of the note—*taweek*. The first syllable, as the bird gives it, is very short and obscure, and *tow*, whether pronounced *tou* or *too*, is a misleading spelling of it. On the other hand, the *h* used with the *w* (actually preceding it in pronunciation, as in all our *wh* combinations) intensifies the syllable and gives it the explosive character that we hear in Pipilo's call-note.

Now, so far as accent is concerned, there are, of course, plenty of precedents in the English language for throwing it back farther than it really belongs. We see this done in such bird-names as Killdeer, Whip-poor-will, and Chickadee, but in such cases the first syllable is never, I think, quite so insignificant as it is in the *to-whee* call. If, however, it is to come on the first syllable, at least let us pronounce the word *to'whee* or, ignoring the *h*, *to'wee*.

But, for myself, I think I shall keep on calling the bird Chewink—and I shall not pronounce it *chew-ink!*—FRANCIS H. ALLEN, *West Roxbury, Mass.*

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Towhees in Winter

January 29, 1936, I was sitting in the house looking out of a window. Opposite the window is our garage and the doors were open, making it possible for me to see all over it. A Towhee caught my eye. It was a male seemingly in good health, which surprised me because we had had quite a snowstorm.

I took some bread with me and went out to the garage but I didn't see him anywhere, so I decided he must have flown into the toolhouse which is connected to the garage. I went to the toolhouse and opened the door, and there was the Towhee, beating himself against the side. I spread out a feast of bread, and while the bird was eating his fill, from outside I heard the distinct call of a Towhee. The minute the Towhee heard it he started beating against the wall again. I opened the door wide and very soon the Towhee joined the other Towhee, which turned out to be another male. They both ate the bread and warm water. I gave them warm water because it was only 19° above zero, and they seemed to enjoy the warmth. I left the door

of the toolhouse open, and when I peeked in half an hour later they were both sound asleep on the back of a chair. The next day they were gone.—ANN GERMAN, *East Islip, N. Y.*

A Raven's Nest Constructed of Barb Wire

This nest is in one of five trees near an abandoned farmhouse in the sand-dune area north of Dalhart, Texas. Wire was used presumably because of the scarcity of vegetation in this desert area.—H. H. BENNETT, *Chief, Soil Conservation Service, Washington, D. C.*

Is the Battle Tide Turning?

Mr. Flicker finds a nice dead limb to suit himself, and with the help of his mate hammers out a cavity. Mr. Starling discovers this operation and remains in the vicinity a few days until the carpenter has finished. He then proceeds to move in without notifying the carpenter, who generally comes out minus a few feathers.

This is a familiar story to bird-lovers. But is the Flicker destined to be driven to isolated sections as the House Sparrows have driven our Bluebirds?

Having made a study of the combat between our most common Woodpecker and these aliens, I observe the following: The Starling is no match for the Flicker face to face at the entrance of the cavity, but once he gains entrance he has the advantage, as the Flicker's legs are short and poor weapons of defense.

Flicker homes may be Starling-proofed by placing a large flat limb directly over the entrance as if it had grown there. This makes it hard for the Starling to alight upon the entrance, and his attempts bring the Flicker out where he can protect his home. Absolute protection, however, is not guaranteed.

This year at my home two pairs of Flickers have successfully reared broods in old cavities from which they were driven two and four years ago by Starlings.—FRANK E. ROBINSON, *Owensboro, Ky.*

Pelicans, Shrikes, and Swallows

In the summer of 1935, near Woods Hole, Mass., I saw some Barn Swallows alighting on the paved road to eat small green caterpillars that were dropping from honey locust trees. They would even run along the pavement a few inches to pick up an additional worm.

In the latter part of March, 1936, passing through the Panama Canal, I noted Pelicans catching and eating small fish in the locks, from a sitting position. I had never before seen Pelicans obtain food except by diving. They would swim away from the fish and toward the edge of the lock, and then turn suddenly and make a scoop or rather jab into the water, and were generally successful in making a catch. I thought that this was an exceptional circumstance due to the man-made lock, and would not occur in nature. Late in April, however, I saw the same trick repeated at the rocky shore of Outer Brass Island, north of St. Thomas, V. I.

In June, 1936, I saw Shrikes in Missouri opening their wings while on the ground, the same as Mockingbirds do in California, apparently to scare up insects from the grass. I had never seen Shrikes do this trick before. —CHAPMAN GRANT, *2970 6th Ave., San Diego, Calif.*

THE SEASON

CXV. October 15, 1936 to February 15, 1937

Boston Region.—The normal fall migration ended with the same general aspects described for the first half in the last season report. As a whole, the land-birds departed early, with many notably late stragglers. Outstanding records are Wilson's Warbler, Worcester, October 16 (Crompton); Yellow-billed Cuckoo, Newbury, October 18 (Griscom); Red-eyed Vireo, Bennington, Vermont, October 27 (Ross), and Cambridge, November 15 (Griscom); Blackpoll Warbler, Athol, November 15 (Mrs. Allison). As in past years, the shore-birds tended to linger later than ever, notable dates this season being Willet, Chatham, October 25 (Clement); Solitary Sandpiper, West Newbury, November 1 (Emilio *et al.*); Turnstone, November 30, Nantucket (Hagar).

The water-fowl migration continued excellent to the end, with the same notable increase in the rarer western Ducks, with special concentrations at Squibnocket Pond, Martha's Vineyard, and southeastern Rhode Island. The flight of Brant was practically non-existent, and the late flight of Canada Geese was poor. European Widgeon were reported from Essex County, Mass., and Middletown, R. I. (Clement and Drury).

Any account of the winter bird-life must be preceded by a summary of the phenomenal weather conditions. Winter came suddenly on November 15 and from then on, through the first week in December, abnormal cold was the order of the day, bringing the coldest weather of the entire winter! These conditions changed abruptly to extraordinary mildness. January was the warmest ever recorded near Boston, and February has, so far, been way above normal. Only 2 inches of snow have fallen the entire winter! Heavy rains have, instead, made the country look like the spring floods after the March thaw. With due regard to variation for latitude, these conditions have prevailed throughout New England.

Mid-December found the birds as a whole much scarcer than usual, both by land and sea. The early winter ushered in a marked flight of Goshawks and a notable flight of Dovekies along the entire coast. Evening Grosbeaks arrived in some numbers in western Massachusetts. The first invasion in history of the King Eider occurred on the Essex County coast from November 22 on, a maximum of 17 and 4 birds in two different places, some still present on January 30; a straggler at Westport, January 17 (Clement). Harlequin Ducks are reported as follows: Squibnocket, 4 male (ad.), 3 male (imm.), 6 females, Dec. 2 (Hagar), a pair January 2 (Garrison, Richardson, Touseys); Plum Island, 1 male (imm.), December 6 (Garrison, Griscom, Richardson); a pair off Cape Ann, December 27 on (Griscom *et al.*). A most unusual number of adult Kumlien's Gulls have been reported. Other winter birds of note: Golden Eagle, Middlesex Fells, January 10 (C. E. Clarke) and Puffin, Ipswich, January 9 (C. E. Clarke). With these exceptions, however, the usual or possible winter visitants to this region are lacking or else represented by a scattering of stragglers only. The list of species is too well known to give here, and space is lacking to itemize these relatively unimportant records.

It is consequently the variety and abundance of southern species wintering north of their usual limits that is making ornithological history this winter. I can state emphatically that it has never been equaled or exceeded in the history of Massachusetts. A sharp distinction must be made here between stragglers and a really wintering population. There are stragglers every winter, and these individuals disappear in January, or gather at some feeding station, where perhaps they are artificially saved from certain death. This winter we have had a notable variety of really wintering species, many of them doing so in numbers for the first time; the stragglers have included other species the occurrence of which in winter

could scarcely have been imagined. In the following list successful wintering can be taken for granted, unless the contrary is indicated, and the word "unprecedented" can be understood in practically every case. Red-throated Loon and Holboell's Grebe, unusually numerous; Leach's (?) Petrel, 15 on January 27, Pleasant Bay, after cold wave and northeast winds (Bishop); Great Blue Heron, common on the Cape, north to Essex County; Canada Goose, about 800 on Cape Cod; Brant, 55 on Pleasant Bay (Hagar), 250 Eastham (Bishop); White-fronted Goose, 2 at Monomoy January 17, with Canadas, not well seen but suspected (Griscom, Garrison, Bishop, Juliet Richardson, Touseys), still there, thoroughly checked and identified February 15 (Bishop); Mallard and Pintail north to New Hampshire line; Gadwall, 4 at Falmouth; Baldpate in numbers Martha's Vineyard and Rhode Island; Green-winged Teal, 7 at Little Compton (Clement); Redhead and Canvasback, in numbers Martha's Vineyard, scattering birds elsewhere; Ring-necked Duck, 9, Great Pond, Eastham; Ruddy Duck, in numbers Martha's Vineyard, 22 at Eastham; Coot, a few on outer Cape and Martha's Vineyard, north to Boston; Black-bellied Plover, Sanderling, Dunlin and Snipe on outer Cape; Lesser Yellow-legs, 1 at Nauset, collected January 12 (Hagar); Woodcock, 1 wintering at Norwell (MacCoy). Ring-billed Gull, in numbers on Cape, north to Essex County; Kittiwake, in numbers north to Essex County; Mourning Dove, outer Cape north to Needham (Notman); Kingfisher, in numbers north to Essex County; Phoebe, Barnstable, January 23 (Bishop); Prairie Horned Lark, outer Cape (Bishop); Carolina Wren, Westport, February 13 (Clement); Catbird at Amherst up to February 5; Hermit Thrush, Cambridge to February 15 (Griscom); Bluebird, positively common on outer Cape, 1 in Essex County on February 13 (winter record or spring migrant?); Orange-crowned Warbler, Belmont, November 27 to January 3 (Robbins), 1 at Eastham, January 17 (Griscom); Pine Warbler, in some numbers outer Cape; Palm Warbler, Eastham, January 17 (Griscom *et al.*); Yellow-breasted Chat, 1 found dead on lawn at Worcester, January 26; Baltimore Oriole, 1 at Rockport, January to February 2; Grackle, 2 at Topsfield, January 24 (Emilio *et al.*); Cardinal, male at Worcester, December 2–7, and January 25 to date (Wendell Parker); Rose-breasted Grosbeak, Amherst, mid-December to December 30; Towhee, Westport, February 13 (Clement); Chipping Sparrow, 1 at Worcester; White-throated Sparrow, throughout eastern Massachusetts and Connecticut Valley to January 25; Swamp Sparrow, on the Cape and even at Athol up to January 24.

Song Sparrow, Blue Jay, and Robin notably scarce in eastern part of state. Old-squaw, notably scarce except off Monomoy; Eider, maximum of 5000 birds off Cape, instead of 20,000 last year; White-winged Scoter, scarce except off Monomoy; American Scoter, scarcely any except off Monomoy; Surf Scoter, strangely missing; Red-breasted Merganser, no real numbers or concentration in State; Buffle-head, marked increase throughout.

Notable accidental records are: European Black-headed Gull, 1 old adult in winter plumage, with pink breast, Newburyport harbor, November 1 (Tousey and Emilio) to January 3, seen on numerous occasions by innumerable observers; 1 immature in first fall plumage January 30 (Buchheister, Emilio, Garrison, Griscom) in same place. Also Western Grebe, Newburyport harbor off Plum Island, December 16 (Francis H. Allen, Winsor Tyler, Hagar) approached within shotgun range.—Ludlow Griscom, *Museum of Comparative Zoology, Cambridge, Mass.*

New York Region.—There was a great opportunity this winter to observe the effect of temperature on bird movements and breeding activities. After a moderate fall, with many late lingerers, a severe cold snap occurred in late November. This may explain the generally reduced numbers of wintering land-birds in the area. But after mid-December, weather averaged very mild up to February 15. The few cold waves were short and not severe, and heavy storms were lacking. The effect of these conditions on poultry was profound. Egg production jumped to unprecedented volume for the season, explainable only by the springlike weather.

Wild-bird movements were also affected.

In part, it was merely a northward trend of species normally crowding closely the northern limit of open water, as American Merganser. But along the Jersey coast definite signs of northern migration were observed in mid-January when some forsythias and pansy-fields in the Barnegat area were in full bloom and some forsythias and pussy willows on Long Island. Even the low spartinas on Newark meadows showed, by mid-January, in well-drained areas, green shoots, 1 to 4 inches high, and the coastal goldenrods were sprouted 4 to 6 inches. The first northbound flocks of Pintails were recorded January 16. Canada Geese and Brant were in definite migration January 24, and on January 17 a Greater Yellow-legs, at Tuckerton, appeared flying north. Among the wintering shore-birds (13 species on the Jersey coast in late December) a definite pick-up in numbers was observed at Beach Haven Inlet after January 15. Joining the tame wintering birds, a nervous, apparently migratory flock of about 1000 Red-backs, 50 Knots, 3 Turnstones, and numbers of Sanderlings and Black-bellied Plover appeared on January 17–24. A Woodcock was calling in Manahawkin Swamp on January 17, and insects were numerous. Eleven species of shore-birds were recorded in Jersey in midwinter.

On the uplands the passerines seemed less affected by the unseasonable weather than the coastal birds. There were increasing reports of flocks of Red-wings, Grackles, Robins, Bluebirds, several Phoebes, and one small flock of Tree Swallows in late January or early February, but only rare records indicating abnormally early arrival at breeding location. On a mild wave in late January a few Robins, Purple Grackles, and Song Sparrows arrived on nesting-grounds not earlier occupied, and acted as they do when normally arriving a month later. But, except for the Grackle, which stayed a few days longer, they left with a drop well below freezing, on February 2, and had not returned February 15. Rebell, from Summit, reports a February Woodcock towering and three flocks of migrating Robins and paired Bluebirds near their nesting-site on February 13.

So many records have been submitted that many significant data are crowded out.

Holboell's Grebes abundant, Long Island (Cruickshank). Pied-billed Grebe lingered very late (Karsch and others). Sooty Shearwater, Coney Island, October 10 (Kraslow). Many Gannets wintered, Long Island (Cruickshank). European Cormorant, Oakwood Beach, November 14 (Norse, Cantor). American Egret, Jones Beach, October 24 (same). Yellow-crowned Night Heron, Prospect Park, November 16 (Shainin). Several American Bitterns wintered. More migrant Snow Geese seen; flock 40, Van Cortlandt Park, November 18 (Karsch). Blue Goose, Jones Beach, October 24 (Norse, Cantor). European Teal, European Widgeon, Hempstead Reservoir, various dates; latter to Jersey, last recorded Shrewsbury River, January 30 (Seeley, Black). Many Shoveller records, including 18 at Brookhaven, February 12 (Raynor); 3, Boonton, November 26 (Murphy). Brookhaven Gadwall reached 12, January 9 (Raynor). Marked flight King Eiders in assorted plumage combinations in changing males; 12, Montauk, January 17 (Cruickshank, Rose, Mangels); 7, Rockaway Point, December 26 (Mayer); Rockaway Point from December 5 (Kraslow); Brighton Beach, January 16 (Norse); 5, Long Branch, December census (Selley, Black); 2, Tuckerton, February 7 (Storer, Urner).

Cant ascribes increase in some wintering Hawks to mild weather; scattered Goshawk records include Inwood Park, October 27 (Norse); Franklin Lake, January 10 (Nichols). Some evidence Broad-winged Hawk wintering: 3, Van Cortlandt Park, November 18 reported (Karsch) and one reported Long Branch, February 13 (Black). Grouse and Bob-white down in spite of mild weather. Wintering shore-birds previously mentioned: Spotted Sandpiper, Westchester Creek, November 9 (Malley); Solitary Sandpiper, Idlewild, October 17 (Mayer); Greater Yellow-legs, Manursing Island, to January 9 (Preston); Purple Sandpiper, good flight, some wintering on sandbars; maximum 24, Rockaway Point, December 5 (Kraslow, Painter, Novello); Western Sandpiper, Beach Haven, January 31 (Eynon, Urner); no evidence early Killdeer flight; Pectoral Sandpiper, Forked River, November 27 (Fables). Parasitic Jaeger, Oakwood Beach, November 14 (Norse, Cantor). Twelve records Glaucous Gull, maximum 4, Hillview Reservoir,

January 1 (Kraslow, Weber), and as far south as Beach Haven. Seven records Iceland Gull. Increase in Great Black-backed Gull. Lesser Black-backed Gull, January 30, Newark Meadows, closely observed, small size, Yellow-legs (Urner); possibly 2, size companion only; January 29, Hudson River (Cant, who knew bird abroad). Hundreds of Kittiwakes, Montauk, January 17 (Cruickshank, Rose, Mangels); 12, Lake Como, October 25 (Seeley, Black). Sabine's Gull, Seaside Park, November 8 (Walsh). Over 12 dead Dovekies, Montauk, mid-January, and other scattered Alcids, including 6 Razor-billed Auks, Montauk, January 17 (Cruickshank, Rose, Mangels). Few Long-eared Owls, but incursion Saw-whets including one hunting broad daylight, Plainfield, November 30 (Hunn); 3, Troy Meadows (Mitterhoff, Kelly, Rosenblum, Schaeffer, Lang); 1, Weequahic Park, February 13 (Mitterhoff, Fechtner); 2, North Arlington, February 12 (Lang). Arkansas Kingbird, Idlewild, October 31 (Mayer). Varied Thrush, Richmond, S. I., November 24, in garden of Mrs. John H. Boesch, identified November 26 by Wm. T. Davis. Blue-gray Gnatcatcher, Columbia University, October 27 (Stephenson). Ruby-crowned Kinglet, Midland Park, February 11 (Nichols); Swimming River, February 7 (Black, Seeley). Pipits wintered Idlewild and Newark Meadows. Two Northern Shrike records. Many late fall Warbler records, and three winter records Yellow Palm Warbler: Port Chester, January 3 (Preston); Long Branch, January 30 (Seeley); Union, February 12 (Kelly). Flock 150 Redpolls, Bronx Parkway, October 31 (Norse, Cantor) gradually thinned, last seen December 5; 12 flying south, Beach Haven, February 7 (Storer, Urner); Union, February 7 (Cant); Inwood Park, February 13 (Karsch). Widespread early flight Lapland Longspur extended well down Jersey coast.—Charles A. Urner, *Elizabeth, N. J.*

Philadelphia Region.—Mild, almost springlike weather has prevailed throughout the late fall and winter. Temperature during January seldom fell below freezing. Clear days were too few and far between. Perhaps there have been warmer winters and winters with greater rainfall, but no one seems to be able to recall them. Reports of buds swelling, forsythia blooming, frogs calling, insects flying, and bats out hunting are all true. True, however, only to a limited extent. Investigation proves that here and there a forsythia bush does show a few flowers, that a few insects are abroad and a few bats have been dodging about in the air. Nevertheless, the great majority of plants and animals are behaving in the usual fashion.

To date (February 15), reports of Purple Grackles are few. They are normally due in numbers the last week of February and will no doubt arrive at the usual time. On February 14, Crows were counted as they came into a winter roost near Woodstown, N. J.—in all perhaps 35,000 birds. They were apparently as settled in their roosting habits as they are in the depths of winter. On the above date not one Great Blue Heron could be found in the large Salem County Rookery, yet on March 3, 1935, 12 were present after a very cold winter. No doubt, early March will be the time for their arrival again this year. In fact, actions of land-birds seem to show little deviation from normal. Northward coastwise and river-course movements of wild fowl have been much more pronounced than usual. Perhaps this may be explained by the tendency of these birds to push northward early in any year when open water and exposed feeding-grounds are available.

The curious appearance of such northern birds as the Dovekie all along the coast may be due to the almost constant easterly winds driving in and along the coast or by these same winds cutting off their normal food-supply, thus forcing the birds to forage far and wide over areas as a rule not invaded.

The winter has been so mild that numbers of birds left behind during the fall migration have survived when under normal winter conditions they would have perished. In what other way can we account for a King Rail, Clapper Rails, and Phoebes being present in January?

Throughout the whole winter small land-birds have been reported as unusually scarce.

A Red-tailed Hawk was observed carrying sticks to its nest, in Salem County, N. J., on February 7 (Street and others). Last year a bird of this species in the same area was seen on its nest on March 29 (Pough). This

would make it appear that the Red-tailed Hawk had started nesting rather early this year, provided, of course, that it is not the habit of this species of Hawk to start nest-building, as it is with some others, long before laying.

Large numbers of the more common Ducks wintered in the unfrozen marshes of Salem County, N. J., on January 19, Black Duck, 6000; Pintail, 400; American Merganser, 200; February 7, Pintail much more abundant—3000 (several observers).

On January 31 the writer took a census of Herring Gulls at various places along the Delaware River from Camden, N. J., south. At each point of observation covering about one mile of waterfront, an average of 100 Gulls was observed. The distance from Camden to the ocean via the Delaware is approximately 100 miles. If the same average holds good for the whole distance, the New Jersey side of the river would have a winter population of 10,000 Gulls. Assuming that the Pennsylvania side would be equally populated, the entire population would be 20,000.

Other records of interest: Fish House, N. J., Mute Swan wintering, 3 appeared late in October, 2 disappeared early in December, 1 still present February 15 (numerous observers). Stone Harbor, N. J., December 20, Clapper Rail (Darby). Dividing Creek, N. J., February 7, Migrant Shrike (Street and others). Haddonfield, N. J., January 31, Phoebe. Westville, N. J., Shoveller, 7 (Potter). Lake Bay, Atlantic County, N. J., February 12, Brant, 12,000; Absecon Bay, 3500; Stone Harbor, N. J., Greater Yellow-legs, 7 (Choate and others). West Chester, Pa., October 15, Wood Duck, 36, November 22; Blue-winged Teal, November 21; Old-squaw, December 5; Black-crowned Night Heron. Elverson, Chester County, Pa., January 9, King Rail caught in a trap and released unharmed (Conway). Mr. Conway stated that the opening of a new reservoir near West Chester has proved to be quite an attraction for Ducks. Magnolia, N. J., January 6, Barred Owl (Alice M. Washburn). —JULIAN K. POTTER, *Collingswood, N. J.*

Washington (D. C.) Region.—Unusually mild weather with much rain characterized the Washington Region from October, 1936, to January, 1937. Our lowest temperature was 14° above zero; and in addition to the mildness of the temperature there was an unusually large number of cloudy days throughout much of the winter, particularly in January. Few unusual northern visitors apparently were present and some of the regular visitors, as for instance the Junco, were much less numerous than usual. Cardinals were singing intermittently all winter, as were some other birds.

Some of the regular summer residents and transients remained in considerable numbers later than usual, undoubtedly influenced by the mildness of the weather. Red-wings were seen in large numbers up to Christmas Day, and Killdeers were also unusually abundant up to that time. A. Laurence Curl reported Red-headed Woodpeckers numerous on January 3 at Mount Vernon, Va., and in decidedly greater numbers than during the previous winter. The same observer saw American Egrets at Four Mile Run, Va., on October 23, which is a late date for this species. Likewise late was the Laughing Gull reported by him near Washington, October 31. Of particular interest in this connection was a Red-backed Sandpiper seen by him at Four Mile Run on November 15, which is very late for the species; and a Lesser Yellow-legs fully identified at Four Mile Run on December 13, which apparently is the first winter record for the species in this vicinity. A Ruby-throated Hummingbird was noted on October 3 at Langley Park, Silver Spring, Md., by L. McCormick-Goodhart, feeding about the cannas. An Olive-backed Thrush was found by George A. Petrides, on October 25, at Chain Bridge, Va., a few miles above Washington, on the Potomac River, which is also rather late. Other Warblers that remained much later than usual were the American Redstart, Black-throated Blue, Black and White, Blackpoll, and Parula, all of which were seen by Mr. Petrides at Licking Banks, along the Anacostia River near Washington, on October 18. In the same locality 12 Common Terns were noted on October 11 by the same observer; and A. Laurence Curl reported the same species at the bird sanctuary on Roaches Run, Va., near Washington, October 18. Other noteworthy records by the same observer are: A Blue Goose seen at Four Mile

Run, Va., on January 17 and 24, which species has but one previous record for the District of Columbia; a Glaucous Gull seen on the Tidal Basin in the city of Washington, January 28, likewise an exceedingly rare bird in this region; and Double-crested Cormorants seen at Roaches Run, Va., on November 15 and 18. Other winter records reported by Mr. Curl on December 25 include the Migrant Shrike, seen at Alexandria, Va.; the Horned Grebe and Black Vulture at Mount Vernon, Va.; and the Black-crowned Night Heron at Roaches Run, Va.—HARRY C. OBERHOLSER, *Biological Survey, Washington, D. C.*

Pensacola (Florida) Region.—Except for the unprecedentedly warm weather that prevailed from Christmas Day to February 1, the double period has been normal in temperature, though lacking in rainfall. The "summer in January" had a marked effect upon plant-life and, at the end of the period, the development of both wild and domestic vegetation is at least a month ahead of schedule. Direct effect upon bird-life has been little, if any.

The outstanding feature of the latter half of the fall migration was the unusual variety, though not the abundance, of waterfowl. The Ring-neck, almost unknown here until the winter of 1935–36, arrived this season on October 31 and has been seen frequently throughout the period. A small flock of Blue Geese appeared on November 22 and stayed through December 6. Buffleheads, always rare this far south, were first seen on November 28 and have been present ever since in small numbers in widely separated localities. Canvas-backs, not noted for many years, appeared in small numbers on December 12 and have been present all winter. R. C. McClanahan reported a small flock of Redheads on December 19. A single Gadwall, only the second in my experience, was seen on December 20 and a few times thereafter. Other species include: Mallard, first seen on October 24; Lesser Scaup, October 25; Black Duck, November 1; Hooded Merganser (rare) and Red-breasted Merganser, November 15; and American Golden-eye, November 28.

Interesting arrivals were: Bay-breasted Warbler (rare), October 15 (Mrs. A. L. Whigham); White Pelican, October 31 (W. A. Kee); Bewick's Wren, November 29; and Slate-colored Junco, December 20. Arrival dates of some regular winter residents include: Coot, October 16; Ruby-crowned Kinglet (Mrs. Whigham) and Yellow-bellied Sapsucker, October 17; White-throated Sparrow, October 19 (Mrs. Whigham); Loon, October 25; Orange-crowned Warbler and Vesper and Chipping Sparrows, October 31; Pipit, November 4 (R. R. Delareuelle); Bonaparte's Gull, November 7 (McClanahan); Hermit Thrush, Robin, Golden-crowned Kinglet, and Blue-headed Vireo, November 8; Horned Grebe and Song Sparrow, November 15; and Winter Wren, November 22. The Brown Creeper, an irregular, though sometimes not uncommon, winter resident, has appeared only twice this winter—February 7 and 14.

Departing fall migrants behaved normally, and only a few call for special comment. The Ruby-throated Hummingbird, staying later than ever before recorded, was seen daily at Century by Mrs. Whigham up to November 1. The last bird to leave was a female—the last adult male disappeared on October 23. Semipalmated Sandpipers, present until November 1, were the latest ever recorded. Two other species, normal in their departure, are noted because they appeared again in spring arrival before the end of this double period: Lesser Yellow-legs, last seen on October 24, reappeared on February 7; and Osprey, last seen on October 25, reappeared on February 14 (McClanahan).

Of unusual or accidental occurrences, the most notable was the Golden Plover seen on January 17 on the beach in company with Black-bellied Plovers. It afforded a fine view at close range to three observers, and its sustained flight when it was flushed quelled any suspicion that it may have been a cripple. An Arkansas Kingbird, seen in company with Bluebirds and Palm Warblers on December 13, was by far the latest of the five that have been noted in this region during my 21 years' residence. Single Ground Doves appeared on October 25 and November 1 and 8. A Pigeon Hawk, reported on the Christmas Census on December 26, was only the third winter occurrence in my experience. Mrs. Whigham reported 4 Purple Finches at Century from February 6 to the end of the

period, and R. C. McClanahan and C. R. Mason saw one in the river swamp on February 14. Wintering Greater Yellow-legs were seen on January 3, and Black and White Warblers on February 7 and 14. Single Semipalmated and Wilson's Plovers, seen on November 1, far later than their normal dates of departure, may have wintered.

In addition to the spring migrants already noted, the Purple Martin arrived on February 5 (McClanahan).—FRANCIS M. WESTON, *Bldg. 45, Naval Air Station, Pensacola, Fla.*

Oberlin (Ohio) Region.—The season in northern Ohio has been unusually mild, so mild that we have enjoyed a number of all-day picnics in the woods. The mornings of December 1 and 7 were the coldest of the winter when it was down to 10° and 11°. Two mornings in February it was 14°. The ground has not been frozen much and I could get earthworms in the garden any time. There has been very little snow but frequent and heavy rains. The outstanding feature was the flood condition of southern Ohio from January 18 to 31. "Immense concentrations of song birds, driven from lowlands, concentrated in brush just above the high-water line. In Scioto County, hundreds of dogs abandoned by flood refugees preying upon wild life, many deer either killed or wounded. Several hundred Herring and Ring-billed Gulls on the Scioto River near Columbus and at O'Shaughnessy Reservoir" (Hicks).

Despite the mild weather, numbers of species and individuals have been remarkably small. There were days when we did not find ten species of birds when out all day. Walkinshaw reports that lots of Juncos and Cooper's Hawks have remained there all winter. It may indicate that many commonly found here have remained farther north.

Battle Creek, Mich. (Walkinshaw): Lapland Longspurs remained into November. A Towhee stayed all winter at E. M. Brigham, Jr.'s, banding station and is still repeating occasionally. A juvenile Blue Goose stayed all winter at the W. K. Kellogg Bird Sanctuary and Dr. Pirnie said it is becoming quite tame. A flock of Evening Grosbeaks fed at Mr. and Mrs. Lee Jickling's feeding station since February 5; two were caught on the 12th for banding.

Toledo (Campbell): A Horned Grebe, January 3, seen by Mr. and Mrs. Fred Stearns; a Virginia Rail seen by John Stophlet and himself, February 7; a Glaucous Gull seen on November 29 by himself and on January 30 by Mr. and Mrs. Stearns; a Yellow-bellied Sapsucker feeding on the sap of an Austrian pine, found by James Nessle and John Stophlet from December 25 to January 10. He himself found a partially albino Black-capped Chickadee late in November and again in January. The head and throat were mostly white with dark blotches and there was some white on one wing. The bill and legs were whitish. Just across in southern Michigan in a place where there were good cover and many blackberries he found Flickers, Winter Wrens, Robins, Hermit Thrushes, a White-throated Sparrow wintering. On November 18 he found a flock of about 40 Pipits perched on the top of a high tree; on November 1, a Yellow Warbler; the only northern visitors were an Evening Grosbeak, January 23, in southern Michigan, and a Redpoll in Ohio, on January 30.

Canton (Ball): Grover Keplinger, Jr., reported a Cowbird for February 4, a first sign of spring.

Newark (Prior): Reports as unusual the numbers of Short-eared Owls around Buckeye Lake; and more Ducks than usual on the lake, chiefly Black Ducks, more than 1100 of them and fewer of other varieties. Claugus reports an unusual circling of a flock of Wild Geese in the fall migration; and for February 12 to 17 a small influx of Robins and Bronzed Grackles.

Cincinnati: Gordon Acomb, together with Harvey Hormberg, reports the finding of a Saw-whet Owl January 31. They found the Owl passing the day in a thicket and observed him at leisure from a distance of 10 feet. Last year Dr. A. A. Allen, on a visit to Cincinnati, found a Saw-whet Owl about 3 miles from this spot, caught the bird in his hand, and took it to New York to attempt to record its song.

Youngstown region (Baker at Salem): Reports 30 Whistling Swans and a Great Black-backed Gull at Conneaut on Lake Erie, on December 13; on December 12 a flock of 53 Red-wings; on January 16 a Great Blue

Heron at Guilford Lake; by February 9 Crows became common.

Cleveland (Skaggs): Reports a few American Mergansers, several hundred Lesser Scaup have wintered within the breakwater; Gulls more numerous than usual and about 100 Bonaparte's Gulls wintering; on December 27 they saw a second-year Glaucous Gull and picked up a dead White-winged Scoter; on January 30 a party of them watched an Iceland Gull from not more than a hundred feet distance, was a little smaller than the Herring Gulls and had a yellow bill, and was in the immaculate white of the adult bird; February 13 noted Prairie Horned Larks paired off for breeding.

From Hicks' and several other reports there were decided indications that the northward migration is slowly beginning. Robins, Great Blue Herons, Killdeers, Turkey Vultures, various Ducks, Red-wings, Cowbirds, Bluebirds, Rusty Blackbirds, Bronzed Grackles, and others are coming into the northern half of the state as the period closes.

Acknowledgment of other reports confirm the above general statements: From O. L. Mitchell, Gertrude Renneckar, Alta Smith, Marcia B. Clay, Raymond O. Marshall, B. H. Smith, Wm. R. Lodge.—Robert L. Baird, *Oberlin, Ohio.*

Minnesota Region.—Weather: October, mild; November, a considerable fall of snow over the state on the 3rd, but no subzero temperatures during the month; December, first ten days heavy snow and severe cold, 26° to 36° below in northern part of the state, then comparatively mild to end of month; January, a month of almost continuous severe cold and heavy snows, blocking highways and railroads, and halting planes with maximum low of 47° below on the 19th in the north-central part of the state; February, cold first ten days, then moderated. The state is at present buried under a heavy blanket of snow, especially west and southwest, some highways with drifts 15 to 18 feet high. In some sections the winter total is 8 to 10 feet of snow. The heavy snow that came in early November kept the ground from freezing deeply. This promises abundant moisture in the spring but the farmers are having a terrific battle against the snow blockade.

During brief milder spells there have been freezing sleet storms which with the deep snow would seem to have made conditions bad for the birds. But reports indicate that fair numbers of the half-hardy species have passed the winter in safety—Tree Sparrows, Juncos, Brown Creepers, Purple Finches, Red-headed Woodpeckers, and, in spite of the deep snow, Horned Larks. Mrs. Peterson reported a hundred or more along the highways in Lac qui Parle County on January 28 and others have seen them in similar situations elsewhere. The big rotary snowplows stir up the gravel, and the Larks and other birds seem to find food in such places. Mr. Swedenborg reports that the Larks first appeared in numbers in the Twin City area on February 13.

Redpolls, Snow Buntings, and Lapland Longspurs have been present as usual, but few other winter visitants. Bohemian Waxwings have been reported in small flocks at Minneapolis (several observers), Anoka (Gillis), Madison (Mrs. Peterson), finding their most favored food scarce as the Robins cleared up a bumper crop of mountain-ash berries before they left last fall.

One or two Magpies have been reported in the western part of the state, and Prof. F. J. Brinley, of the North Dakota Agricultural College, saw a Clark's Nutcracker along the Red River of the North near Moorhead on November 21, a rare straggler into Minnesota.

Dr. Leudtke, of Fairmont, writes that a Bluebird drank regularly at his bird-bath up to December 15 but never partook of any of the food proffered. The 'usual' Flicker is staying there again. He adds "The Hungarian Partridges are holding their own but I doubt if they will ever become numerous, as the Ring-necked Pheasants disturb their nests so often that their increase is decidedly cut down. Since the snow is deep (January 22) many Partridges and Pheasants are coming to the highways to feed. They seem to be quite plentiful."

Miss Olga Lakela, of Duluth, reports that she saw a Glaucous Gull on two occasions near Duluth, and R. M. Berthel, of St. Paul, that a single Baldpate Duck remained with a few other species in an open place in White Bear Lake through December and was there up to January 8 at least. The bird was able

to fly with the others and showed no sign of being injured. This is the first winter record of this species that we have for Minnesota. Mr. Berthel also states that there was a very large flight of Ducks through White Bear Lake last fall (late in October). They were mostly Lesser Scaups and Ring-necks.

The Swanson brothers of Cannon Falls report an Oven-bird there on October 17, which is a somewhat later date than we have had before; and Mr. Swedenborg furnishes a fifth winter date for the Sharp-shinned Hawk—December 13.

Mr. and Mrs. Swedenborg devoted the whole of Christmas Day to making a bird census in the vicinity of Minneapolis. The day was foggy and damp—"the mildest Christmas Day here in the last eight years." They checked 21 species, an exceptional number for a winter day in Minnesota. Among them were 14 Wilson's Snipe (along an open spring-fed creek in the Minnesota River Valley), 1 Mallard, 1 Red-bellied and 3 Red-headed Woodpeckers, 6 Brown Creepers, 3 Cedar Waxwings, 1 Northern Shrike, 7 Starlings, "quite a few" Purple Finches, 2 Redpolls, 3 Juncos, and a few Tree Sparrows and Snow Buntings. (For the full list see BIRD-LORE for January–February, page 61.) It takes real bird enthusiasts to make such a showing hereabouts.

The following notes are from P. O. Fryklund, of Roseau, in the northwestern corner of the state. "A very cold winter with deep snow; minimum temperature 42° below zero. This has been an off year for birds, particularly as to the southward movement of our usual visitors from the north. Few Goshawks, no Rough-legs and only a very few northern Owls. A Raven was taken by a trapper on the south shore of Lake of the Woods on November 10. A second Starling for the locality was shot in Roseau on January 2. Evening Grosbeaks in small flocks have been seen at intervals throughout the winter, and a lone flock of 14 Pine Grosbeaks at Lake of the Woods on December 1. Hungarian Partridges and Ring-necked Pheasants have been scarce since the protracted cold weather of last winter. Ruffed Grouse are fewer than for many years but both Sharp-tailed and Pinnated Grouse are fairly numerous. Golden Eagles have been seen throughout the county (Roseau), and two met their deaths as usual in wolf traps." —THOS. S. ROBERTS, *Museum of Natural History, University of Minnesota, Minneapolis, Minn.*

St. Louis Region.—This entire winter has been mild, with occasional snow and sleet, a few bursts of cold weather, and more than the average rainfall. The region, however, was not affected by the great flood, but reports from Robertson and a few other places indicate that the largest number of birds ever seen in these sections, at that time of the year, appeared shortly after the spread of flood-waters over the fields of the Southland.

Of the unusual in the immediate neighborhood of St. Louis was the finding of Snow Buntings at Ranken by members of the Webster Groves Nature-Study Society while on their monthly bird-census trip, January 23, and also the rather uncommon Purple Finches. A Harris's Sparrow has been reported by Miss L. R. Ernst, rare in the St. Louis area but somewhat common over the western part of Missouri. At Warrensburg, report comes from Mrs. Nattinger that the erratic Lapland Longspurs are here again, 500 of them being estimated on a 9-mile drive along the highway. Seed scattered along the highways by rural postmen may have been the attraction that drew them to the roadside, but many were killed by flying low in front of passing cars.

From Fayette, William Jenner writes that a Golden Eagle, captured in a trap, was placed in a small cage in a hardware store, but it broke the cage open, crashed through a window-pane, and regained its freedom. He reports a Robin feeding on sumac berries on December 22, and on the same day saw 3 Purple Finches. On January 7, with rain falling and temperature just below freezing, much damage was caused to trees and to birds also, for the sleet not only shut off their food-supply, but formed ice on their wings and tail feathers so that they were unable to fly, or to fly but a few feet at a time. Ducks reported plentiful along the Missouri River.

G. E. Moore, Lebanon, notes that the wintering Sparrows, with the exception of Tree Sparrows and Goldfinches, were subnormal, owing to a shortage in food-supply,

but that White-throats were plentiful at Taneycomo; Pintails, Mallards, and Baldpates were more plentiful this year on local ponds near Lebanon than for many years; and that Bob-whites came through the hunting season and ice-storms in good condition, with large unbroken coveys. The Starlings there are reducing the winter food-supplies, especially cedar and sumac berries, persimmons, and other fruit, making it hard for the wintering Mockers, Robins, Bluebirds, Waxwings, and Flickers. Wilson's Snipe, Killdeer, Rusty and Red-winged Blackbirds, and Cowbirds seen February 12; an early record of February 14 for the Great Blue Heron at Ha-ha-tonka; and last dates at Lebanon of November 8, for Leconte and Savannah Sparrows. Robins remained plentiful as late as November 15.

Wayne Short, of St. Charles, reports a wedge of Pintails on February 8, 17 days earlier than his observation last year, and on February 8 very large flocks of Pintails and Mallards, mostly Pintails, and 5 Lesser Scaup. As letters received from time to time have commented on Hawks seen lately, the reports on Hawks, Ducks, and Bob-whites are encouraging, for during last summer and fall most letters were bewailing the fact that Hawks were hard to find.

The Alton Dam across the Mississippi River is now completed and beginning to fill, so that before long another extensive artificial lake will be created here—a new haven for water-birds.—STERLING P. JONES, *Webster Groves, Mo.*

Lower Rio Grande Valley.—In contradiction to the apparent warning given by the early northers of September and October, the winter was surprisingly mild—we have had no killing frost to date. The early cold spells started the birds this way, it seems, for throughout the fall we had a greater concentration of winter residents than has been observed in several years. Sapsuckers, Flickers, Grasshopper Sparrows, and Clay-colored Sparrows were much more common than usual. A number of late migrants, among them the Robin and Bluebird, came in ahead of schedule. Spring (if that season be indicated by the budding of those trees which shed the leaves in the fall) was from six weeks to two months ahead of last year. The hackberry, for instance, blossomed in mid-January.

Our regular winter-resident Black-throated Green Warblers were not observed in Cameron County until November 1 when 7 of this species were recorded during a 50-minute visit to an observation station near Santa Maria. An hour was spent at the same station the previous week without recording a single one, but each visit since that date has resulted in listing 2 to 18 of these birds, although most of the visits have been of a shorter time (20 to 30 minutes). Orange-crowned and Nashville Warblers and Ruby-crowned Kinglets have been found constantly since November 1, whereas they were previously casual. Wilson's Warblers were not encountered regularly until December but seemed to be more plentiful than usual after that. On several occasions during January and February as many as 6 were recorded in an hour's time in the southwestern part of the county. Mrs. Ray reports seeing Wilson's Warblers regularly during December and January at her home northwest of Sebastian, Willacy County. Conditions in the western part of Hidalgo County appear to be quite different as Mr. Hale has seen no Wilson's Black-throated Green, or Nashville Warblers and no Blue-headed Vireos during the winter. He states that all small land-birds are scarcer this year.

Mr. Hale sent in the following migration data: October 18, Gadwall and Duck Hawk; October 23, Western Meadowlark; October 25, Nashville Warbler; October 30, Yellow-bellied Sapsucker and Audubon's Warbler; November 1, Mallard, Canvas-back, Ruddy Duck and Sprague's Pipit; November 5, Ruby-crowned Kinglet and Burrowing Owl; November 7, Bluebird; November 12, Golden-crowned Kinglet; November 13, Sandhill Crane, Robin, Vesper Sparrow, White-crowned Sparrow and Cassin's Sparrow; November 26, American Bittern, Goldfinch, Savannah Sparrow and Swamp Sparrow. One other date was sent in from Hidalgo County by Mr. Stanley Mulaik of Edinburg: December 5, Catbird.

Migration dates from Cameron County are as follows: October 24, Song Sparrow; November 1, Sora and Clapper Rail; November 8, Eared Grebe and Canvas-back; November 14, Bluebird and Chipping Sparrow; No-

vember 15, Hermit Thrush and Vesper Sparrow; November 21, Robin (Dr. P. B. Marquart), Grasshopper Sparrow and Savannah Sparrow; November 26, Short-eared Owl and White-crowned Sparrow; December 5, Pine Warbler; December 6, Herring Gull; December 10, Pigeon Hawk and Clay-colored Sparrow; December 23, White-throated Sparrow.

Hawks seem much less plentiful around Harlingen than for several years. In Hidalgo County the fall migration was somewhat more concentrated than usual, but most of the birds passed on into Mexico in the early part of October and since then they appear to be scarcer than during the previous two winters. Mr. Mulaik, of Edinburg, reported that several flocks made up of hundreds of Hawks passed over that town on October 2, and smaller flights on several other days. He stated that the birds flew in circles, the great numbers forming a kind of cylinder something like a whirlwind. These formations would drift along, mounting higher and higher, until a certain elevation was reached, when the leaders would strike out straight south with much increased speed. The others would follow when they reached the same elevation.

A visit to the marshes in the eastern part of Cameron County on October 24 disclosed the largest single flock of Wood Ibis the writer had ever observed. About 700 of these birds were massed in one place. At the same marsh were also 500 to 600 Roseate Spoonbills as well as many White-faced Glossy Ibises, Egrets, and Herons, and thousands of Ducks.—L. Irby Davis, *Harlingen, Texas.*

Portland (Oregon) Region.—The warm, dry weather of the late summer persisted through the latter part of October and November. With the new year, colder weather arrived with more than the usual amount of snow, climaxing with a fall of 1½ feet in Portland on January 31. Snow covered the entire state, ranging from a few inches in the coast section to several feet in portions of eastern Oregon. Many people fed the birds during the snowy weather. The Oregon Audubon Society distributed two tons of feed through its membership, rural mail-carriers scattered great quantities along their routes, while hundreds of private individuals fed the birds in their localities throughout the state. Apparently, the birds came through the severe weather without more than the usual number of casualties.

Owing to the press of other duties, the writer's bird observations have been quite limited during the past four months, and sparse reports from others seem to indicate a like handicap.

Carl Richardson, of Klamath Falls, spent October 16 to 18 on the South Fork of the Sprague River. He was particularly impressed with the singing of the Townsend's Solitaires. He says that Lake and Klamath counties, in late October, are notable for their Solitaires. Usually 6 to 8 could be heard at every stop. Clark's Nutcrackers, Modoc Woodpeckers, Blue-fronted Jays, Gambel's Sparrows, and other birds were common. In the Blue Mountains in Umatilla County, from November 7 to 17, Mr. Richardson observed the Western Goshawk, Gray Ruffed Grouse, Richardson's Grouse, Franklin's Grouse, the Rocky Mountain Hairy, Alaska Three-toed, and Pileated Woodpeckers, Black-headed and Rocky Mountain Jays, Nutcrackers, Bendire's Crossbills, and many other birds. Western Evening Grosbeaks were abundant. On November 29, in the hills east of Klamath Falls, he observed a flock of about 100 Piñon Jays.

In a report on the Klamath Basin for the period, Herbert H. Dill, Junior Biologist of the U. S. Biological Survey, supplies a great deal of interesting data. It was estimated that there were 200,000 Geese of all species and 500,000 Ducks of all species on the Tule Lake Refuge on November 1. Canada, White-fronted, Snow, Cackling, and Emperor Geese were noted, while among the Ducks listed were Pintails (most abundant), Mallards, Widgeon, Golden-eyes, Gadwalls, Shovellers, Green-winged Teal, Cinnamon Teal, Blue-winged Teal, Lesser Scaup, Ring-necked Duck, Redhead, and Canvas-back. During the hunting season on the Public Shooting Grounds, Emperor Geese were taken on November 10, 11, and 16, and one Ross's Goose on November 20, the first recorded since the Refuge was established. Twelve Tule Geese were taken between November 5 and 15. Mr. Dill says, "Compara-

tive numbers show a 30 per cent increase in water-fowl this year over last year during November, and at the respective times of both seasons when water-fowl concentrations were largest on Tule Lake. This, no doubt, indicates that there was an increase in 1936 over 1935. Varying weather conditions on the Pacific Flyway during the two seasons made it impossible to accurately state that the above 30 per cent is, or is not, a net gain. However, we can safely state that there were more birds hatched and raised to maturity this year than last." About 2000 Hawks spent the winter on the Refuge. The American and Ferruginous Rough-legs were most abundant, with Marsh Hawks, Sparrow Hawks, Duck Hawks, Prairie Falcons, and Western Red-tailed Hawks present.

On December 27, the writer and several others visited Sauvies Island, at the confluence of the Willamette and Columbia rivers. Forty-nine species of birds were noted. A flock of about 1000 Crossbills, a group of 10 Western Lark Sparrows, and 11 Whistling Swans were the high points of the day. It is notable that the Lark Sparrows were seen in almost the same location and in the same number as on September 19, when they were observed by the writer and others. Of unusual occurrence west of the Cascades, this is apparently a small band of stragglers that are wintering on the island.

Mrs. French, of Carlton, has been feeding a covey of 17 Bob-whites and a covey of 11 Valley Quail in her yard during the winter. A great invasion of Crows occurred in that area during the cold weather in January.

Dr. Prill, of Scio, reports the usual numbers of winter birds at his feeding stations.

Mrs. Stuart R. Strong, of Portland, has undertaken a "through the year" census of birds to be taken at two-month intervals over the same route as that covered at the Christmas Census. Many valuable data concerning the relative abundance of birds at various seasons, with the species represented, can be gathered in this manner. Despite deep snow and a freezing wind, Mrs. Strong covered her route on February 7, listing 273 birds of 17 species.—H. M. Du Bois, *Clackamas, Ore.*

REFUGE AREAS IN NATIONAL FORESTS

Secretary of Agriculture Henry A. Wallace has recently signed the following modifications of regulation T-9 of the Forest Service, and Mr. F. A. Silcox, Chief of the Forest Service, has signed the following amendment to the National Forest Manual:

The instructions under the heading "What Constitutes Occupancy Trespass" on page 18-T of the National Forest Manual are hereby amended, effective January 15, 1937, by substituting the following for the first paragraph:

"The use of National forest land without permit for any purpose for which special-use permits are required or committing any other act prohibited by Regulation T-9, constitutes occupancy trespass. Excepting under Regulation T-9 (I), traveling, temporary camping, lawful hunting, surveying, or prospecting may be carried on without permit, and camp wood and forage for stock used in connection with such projects may be taken free of charge."

The instructions under the heading "Action to Stop Trespass" on page 18-T are hereby amended by adding the following paragraphs:

Regulation T-9 (I) will be restricted to the special classes of areas outlined in the regulation and where other means of affording necessary protection are inadequate. The California Condor is an illustration of a species of rare bird requiring an undisturbed habitat and nesting places and an area sufficient to provide such refuge from human disturbance.

When it is desired to apply the regulation the Regional Forester will have a comprehensive report and map prepared on any area to be considered for selection and submit them to the Chief, Forest Service. To insure the fullest protection it is desirable where practicable to enlist the support and cooperation of the State Game Department and other interested local agencies.

By this method the Forest Service is providing for the setting aside of small areas within a National Forest against trespass in any manner whatever, in order that rare fauna and flora may be preserved. This amendment and modification of regulation resulted from efforts in behalf of the preservation of the California Condor. The coöperative interest of the U. S. Forest Service in the protection of that bird, and in the enlargement of the program to make it possible to apply the same principle to other threatened species, has been splendid.